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# TECHNICAL TRANSLATIONS

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## BIBLIOGRAPHY

OBZOR POL'SKOY TEKHNICHESKOY LITERATURY. POLISH TECHNICAL ABSTRACTS, 1959, NO. 2(34) ABSTRACTS 5889-6024. 1959, 1v.
Order from CIDNT

Consists of bibliographical descriptions in English and Russian of contributions selected from articles which have appeared in technical periodicals, books, pamphlets and other Polish publications.

SECONDARY POWER SOURCES (BIBLIOGRAPHY). 24 Sep 59 [32]p. 285 refs. AF 1256119.
Order from LC or SLA mi$3.00, ph$6.30 59-22161

Trans. from Soviet open sources, 1955-1959.

Entries are alphabetically arranged under the following headings: (1) Nuclear batteries, (2) Solar batteries, (3) Solar power plants, (4) Photoelectric effects, (5) Thermoelectric effects, (6) Semiconductors, (7) Energy converters, and (8) Miscellaneous. All entries are later than 1954. A list of the 31 periodicals exploited is included.

Library of Congress, Washington, D. C.
MONTHLY INDEX OF RUSSIAN ACCESSIONS. Jan 60, 325p.
Order from GPO $12.00/year

This index is a record of the publications in languages spoken in the Soviet Union currently received by the Library of Congress and a group of cooperating libraries. It consists of three parts: Part A lists monographic literature published after 1944, with the title in the original language preceded by its English translation; Part B lists periodicals published after 1946, with their tables of contents translated into English; Part C constitutes a subject guide to both the monographs and periodical articles listed in Parts A and B.

## AGRICULTURE

Hanau, A.
THE GOALS OF AGRICULTURAL MARKETING RESEARCH (Arbeitsziele der landwirtschaftlichen Marktforschung). [1959] [22]p. 19 refs.
Order from SLA mi$2.70, ph$4.80 59-20980

Trans. of Agrarwirtschaft (West Germany) 1956 [v. 5] no. 2, p. 34-38.

The conclusion is drawn that it is the task of market and price policy to improve and enhance the effect of the price mechanism in the case of inelastic products. A market and price policy directed towards mitigating supply fluctuations by a balancing storage economy for those agricultural products which meet inelastic demand, does not hamper competition. On the contrary, such a price and market policy decreases frictions and increases the efficiency of the market economy. Where free price formation renders it difficult to reach market equilibrium, price formation alone is not a suitable means of allocation, but it must be supplemented by, or maybe even replaced by, interventionistic methods of allocation. (A lecture)

Piel-Desruisseaux, Jean.
CURRENT STATUS AND PROSPECTS OF SCIENTIFIC ORGANIZATION STUDIES ON AGRICULTURAL WORK IN FRANCE (État Actuel et Perspectives des Études d'Organisation Scientifique du Travail Agricole en France). [1959] [13]p.
Order from SLA mi$2.40, ph$3.30 59-20888

Trans. of Economie Rurale (France) 1958, no. 35, p. 19-22.

### Animal Husbandry

COORDINATED CONFERENCE ON PROBLEMS OF SCIENTIFIC RESEARCH WORK IN THE SPHERE OF FEED FOR AGRICULTURAL ANIMALS. [1959] 9p. Trans. A-1071.
Order from LC or SLA mi$1.80, ph$1.80 59-22323

Trans. of Vestnik Sel'skokhozyaystvennoy Nauki (USSR) 1959, v. 4, no. 3, p. 144-147.

DIRECTIONS FOR THE APPLICATION OF BIOMYCIN PREPARATIONS. 15 Oct 59, 2p. Trans. V-1492.
Order from LC or SLA mi$1.80, ph$1.80 59-22295

Trans. of Veterinariya (USSR) 1959, v. 36, no. 7, p. 91.

IN THE USSR MINISTRY OF AGRICULTURE (V Ministerstve Sel'skogo Khozyaystva SSSR). 14 Oct 59, 10p. Trans. V-1488.
Order from LC or SLA mi$1.80, ph$1.80 59-22291

Trans. of Veterinariya (USSR) 1959, v. 36, no. 9, p. 90-92.

Antibiotics, especially "biovetin" and "biovit 40" are being extensively manufactured in the USSR for use in animal husbandry. Superficial fermentation on grain is a method for preparation of fodder antibiotics which is used to an increasing extent throughout the USSR. An insecticidal preparation "nikokhloran" has been developed. The method of determining pregnancy of cows beginning with the 30th day by injection of blood serum into male frogs is to be widely tested.

ON THE EFFECT AND APPLICATION OF NEW PHENOTHIAZINE DERIVATIVES (SO-CALLED TRANQUILIZERS) IN THE BOVINE. [1959] 16p. (3 figs. omitted) 45 refs.
Order from SLA mi$2.40, ph$3.30 60-10668

Trans. of Deutsche Tierärztliche Wochenschrift (West Germany) 1958, v. 65, no. 9, p. 229-235.

Boyko, A. A.
BRIEFLY WHAT WE CAME TO KNOW ABOUT VETERINARY MEDICINE OF THE U. S. A. (Kratko o Tom, Chto My Uznali o Veterinarii SSHA). 13 Oct 59, 24p. (10 photos. omitted). Trans. V-1489.
Order from LC or SLA mi$2.70, ph$4.80 59-22292

Trans. of Veterinariya (USSR) 1959, v. 36, no. 7, p. 74-83.

Report of a delegation of veterinary specialists of the USSR who visited the United States (date not given, probably 1959) under the provisions of the reciprocal cultural exchange agreement.

Hussel, L.
VETERINARY SERVICE IN THE GERMAN DEMOCRATIC REPUBLIC (Veterinariya Sluzhba v Germanskoy Demokraticheskoy Respublike). 26 Oct 59, 10p. Trans. V-1499.
Order from LC or SLA mi$1.80, ph$1.80 59-22302

Trans. of Veterinariya (USSR) 1959, v. 36, no. 9, p. 80-82.

Klette, H.
MECHANISM OF HORMONAL TREATMENT FOR WEIGHT GAIN STERILIZATION AND LACTATION, tr. by P. M. M. 25 July 56, 3p.
Order from SLA mi$1.80, ph$1.80 59-20967

Partial trans. (p. 514-515, 518, 525-526) of Wiener Tierärztliche Monatsschrift (Austria) 1953, v. 40 [no. 9] p. 513-530.

Kolyakov, Ya. E.
MAIN STAGES IN THE DEVELOPMENT STUDIES OF GLANDERS (Osnovyye Etapy Razvitiya Ucheniya o Sape). 20 Oct 59, 19p. Trans. V-1495.
Order from LC or SLA mi$2.40, ph$3.30 59-22298

Trans. of Veterinariya (USSR) 1959, v. 36, no. 7, p. 84-88.

Luttsev, N. I.
ORDER OF FINING FOR VIOLATION OF THE USSR VETERINARY STATUTE. 16 Oct 59, 3p. Trans. V-1491.
Order from LC or SLA mi$1.80, ph$1.80 59-22294

Trans. of Veterinariya (USSR) 1959, v. 36, no. 7, p. 30-31.

Margolin, L. S.
HISTORY OF THE ORGANIZATION OF SANITARY-EPIDEMIOLOGICAL STATIONS IN USSR (K Istorii Organizatsii Sanitarno-Epidemiologicheskikh Stantsii v SSSR). 28 Sep 59, 4p. 3 refs. Trans. V-1482.
Order from LC or SLA mi$1.80, ph$1.80 59-22285

Trans. of Gigiyena i Sanitariya (USSR) 1958, v. 23, no. 7, p. 84-85.

Mittendorf, H. J.
WHAT CAN WE LEARN FROM SLAUGHTER ANIMAL MARKETING IN SWEDEN? II. (Was können wir aus der Schlachtviehverwertung in Schweden Lernen?) tr. by Edward E. Carson. [1959] [29]p. 15 refs.
Order from SLA mi$2.70, ph$4.80 59-20865

Trans. of Agrarwirtschaft (West Germany) 1957, v. 6, no. 3, p. 70-79.

Mutovin, V. I.
USE OF ANTIBIOTICS FOR DISEASES OF RESPIRATORY ORGANS (Primeneniye Antibiotikov pri Zabolevaniyakh Organov Dykhaniya). 29 Oct 59, 15p. Trans. V-1498.
Order from LC or SLA mi$2.40, ph$3.30 59-22301

Trans. of mono. Sovremennyye Metody Primeniya Antibiotikov v Veterinarii, Moscow, 1958, p. 97-106.

Nikol'skiy, N. M.
ERADICATION OF GLANDERS IN THE USSR IS AN OUTSTANDING ACHIEVEMENT OF SOVIET EPIZOOTIOLOGISTS. (Likvidatsiya Sapa v SSSR: Vydayushcheyesya Dostizheniye Sovetskikh Epizootologov). 19 Oct 59, 7p. Trans. V-1490.
Order from LC or SLA mi$1.80, ph$1.80 59-22293

Trans. of Veterinariya (USSR) 1959, v. 36, no. 7, p. 89-90.

Selenitsa, M., Lyuliy, M., and Nikanorov, V. A.
ORGANIZATION OF THE VETERINARY SERVICE IN ALBANIA (Organizatsiya Veterinarnoy Sluzhby v Albanii). 26 Oct 59, 4p. 1 ref. Trans. V-1500.
Order from LC or SLA mi$1.80, ph$1.80 59-22303

Trans. of Veterinariya (USSR) 1959, v. 36, no. 9, p. 83.

Plans for the immediate future include an attack on brucellosis, tuberculosis, helminthic infections, etc., and the construction of a meat combine and freezer. Artificial insemination of cattle has been undertaken on a large scale.

## Plant Cultivation

COORDINATION OF SCIENTIFIC RESEARCH. [1959] 11p. Trans. A-1058.
Order from LC or SLA mi$2.40, ph$3.30 59-22315

Trans. of Zashchita Rastenii ot Vrediteley i Bolezney (USSR) 1959, v. 4, no. 2, p. 54-55.

An account is presented of the activities of a series of zonal conferences within the USSR dealing with plant protection.

Dorozhkin, N. A.
CONFERENCE OF EUROPEAN COUNTRIES ON POTATO WART (Konferentsiya Evropeyskikh Stran po Raku Kartofelya). [1959] 5p. Trans. A-1057.
Order from LC or SLA mi$1.80, ph$1.80 59-22314

Trans. of Zashchita Rastenii ot Vrediteley i Bolezney (USSR) 1959, v. 4, no. 2, p. 46.

Kazakov, Z. M.
EXPERIMENT WITH AERO-CHEMICAL TREATMENT OF FORESTS (Opyt Aviakhimicheskoy Obrabotki Lesov). [1959] 5p. Trans. A-1054.
Order from LC or SLA mi$1.80, ph$1.80 59-22311

Trans. of Zashchita Rastenii ot Vrediteley i Bolezney (USSR) 1959, v. 4, no. 2, p. 29-30.

The chief difficulty encountered in large-scale dusting of forests against the gypsy moth has been the unsolved problem of signalling from ground to plane, to determine the limits of areas to be treated. Two-colored flags on the crowns of border trees, smoke pots and pilot balloons have been tried, with unsatisfactory results. Ground-plane radio communication has been tried on a limited scale, with results that seem to justify the expense of this method of signalling.

Khramtsov, N. N.
RESULTS AND TASKS IN GYPSY MOTH CONTROL (Itogi i Zadachi Bor'by s Neparnym Shelkopryadom). [1959] 7p. Trans. A-1053.
Order from LC or SLA mi$1.80, ph$1.80 59-22310

Trans. of Zaschita Rastenii ot Vrediteley i Bolezney (USSR) 1959, v. 4, no. 2, p. 27-29.

Kirushev, A. G. and Korotkikh, G. I.
AEROSOLS AGAINST THE GRAIN MOTH (Aerozoli Protiv Zernovoy Sovki). [1959] 5p. (1 illus. omitted). Trans. A-1052.
Order from LC or SLA mi$1.80, ph$1.80 59-22309

Trans. of Zaschita Rastenii ot Vrediteley i Bolezney (USSR) 1959, v. 4, no. 2, p. 21.

Malinin, V. M., Dzholova, N. G. and others.
AGENTS AGAINST THE COBWEB MITE: ON COTTON (SYSTEMIC POISONS); ON VEGETABLE AND BERRY CROPS (DITHIOPHOS); ON ORNAMENTAL PLANTS (OCTAMETHYL AND SULFONATE ESTER); ON ROSES (METHYLMERCAPTOPHOS). [1959] 9p. Trans. A-1056.
Order from LC or SLA mi$1.80, ph$1.80 59-22313

Trans. of Zashchita Rastenii ot Vrediteley i Bolezney (USSR) 1959, v. 4, no. 2, p. 34-37.

Maslennikov, I. P.
TESTING POISONS ON PESTS OF VEGETABLE CROPS (Ispytaniye Yadov na Vreditelyakh Ovoshchnykh Kul'tur). [1959] 5p. Trans. A-1055.
Order from LC or SLA mi$1.80, ph$1.80 59-22312

Trans. of Zashchita Rastenii ot Vrediteley i Bolezney (USSR) 1959, v. 4, no. 2, p. 33-34.

Mirpulatov, K. I. and Dzhiyembayev, Zh.
NEW INSTITUTES OF PLANT PROTECTION. [1959] 5p. Trans. A-1059.
Order from LC or SLA mi$1.80, ph$1.80 59-22316

Trans. of Zaschita Rastenii ot Vrediteley i Bolezney (USSR) 1959, v. 4, no. 2, p. 56.

Pätzold, Chr. and Weiss, H. M.
INFLUENCING THE POTATO TUBER BY RADIOACTIVE COBALT ($Co^{60}$) GAMMA RAYS (Beeinflussing der Kartoffelknolle durch Gammastrahlen radioaktiven Kobalts ($^{60}Co$)). [1959] [24]p. 11 refs.
Order from SLA mi$2.70, ph$4.80 59-20875

Trans. of Angewandte Botanik (Germany) 1957, v. 31, p. 93-105.

Paykin, D. M., Novozhilov, K. V. and Mende, P. F.
CHEMICAL METHOD FOR THE CONTROL OF THE GRAIN MOTH (O Khimicheskom Metode Bor'by s Zernovoy Sovkoy). [1959] 6p. Trans. A-1051.
Order from LC or SLA mi$1.80, ph$1.80 59-22308

Trans. from Zashchita Rastenii ot Vrediteley i Bolezney (USSR) 1959, v. 4, no. 2.

Starostin, S. G. and Bondin, V. P.
HELIOCOPTERS IN ORCHARDS AND VINEYARDS (Vertolety v Sadakh i Vinogradnikakh). [1959] 7p. Trans. A-1048.
Order from LC or SLA mi$1.80, ph$1.80 59-22306

Trans. of Zashchita Rastenii ot Vrediteley i Bolezney (USSR) 1959, v. 4, no. 2, p. 15-17.

The aerodynamic characteristics of the helicopter (formation of a descending current of air, whirling from the rotors) make it suited to spraying and dusting operations, since chemical particles penetrate to the under side of leaves, especially in the dense crowns of trees. Tests in orchards and grape vineyards are described. Treatment by helicopter is more expensive than similar treatment using an airplane, but it is predicted that the helicopter will become an important means of pest control on slopes and broken terrain.

## ASTRONOMY

Gurzadyan, G. A.
A "LUNAR" RADIO INTERFEROMETER. [1959] 8p. 2 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-20192

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 118, no. 6, p. 1094-1097.

The basic concepts concerning the function of the lunar interferometer as well as the method of determining the angular dimensions of discrete sources are presented. (See also 59-20193)

## BEHAVIORAL SCIENCES

### Personnel and Training

Goossens, Franz.
THE EQUALIZATION OF THE LABORER TO THE CONTRACT EMPLOYEES (Die Angleichung der Arbeiter an die Angestellten). [1959] [10]p. 11 refs.
Order from SLA mi$1.80, ph$1.80 59-20877

Trans. of Mensch und Arbeit (Austria) 1958, v. 10, no. 1, p. 11-13.

Goossens, Franz.
THE RELATION BETWEEN THE NUMBER OF RANKS IN AN ORGANIZATION AND THE NUMBER OF SUBORDINATES IN EACH OF THE RANKS (Der Zusammenhang zwischen den Zahlen der Rangstufen im Betrieb und der Jeweils Unterstellten Mitarbeiter). [1959] [13]p.
Order from SLA mi$2.40, ph$3.30 59-20873

Trans. of Mensch und Arbeit (Austria) 1958, v. 10, no. 1, p. 9-10.

### Psychology

Andrieux, Cécile.
THE SPATIAL FACTOR (Le Facteur Spatial). [1959] [15]p. 20 refs.
Order from SLA mi$2.40, ph$3.30 59-20889

Trans. of l'Année Psychologique (France) 1956, v. 56, no. 2, p. 453-460.

Lattig, K. and Grandjean, E.
DEMONSTRATION OF A CONDITIONED FLIGHT REFLEX OF THE RAT (Demonstration eines Bedingten Fluchtreflexes der Ratte) tr. by W. H. Everhardy. 3 Dec 58, 10p. 2 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-12343

Trans. of Helv[etica] Physiol[ogica et Pharmacologia] Acta (Switzerland) 1955 [v. 13] p. 54-55 and 1956, v. 14, p. 3-5, 53-54.

Knapp, H.
FORCE FIELD ANALYSIS (Kraftfeldanalyse). [1959] [14]p.
Order from SLA mi$2.40, ph$3.30 59-20885

Trans. of Mensch und Arbeit (Austria) 1956, v. 8, no. 3/4, p. 1-9.

The following problems in social psychology are considered: (1) The problem of group standards, (2) the problem of influence, and (3) the tension level in a group.

Pattie, Frank A., Jr. and Stavsky, William H.
SENSORY ORGANIZATION AND THE SPEED DIFFERENTIATION ABILITY OF THE CHICKEN (Die Struktur-Funktion und das Geschwindigkeitunterscheidungsvermögen des Huhns). [1959] [12]p. 2 refs.
Order from SLA mi$2.40, ph$3.30 59-20878

Trans. of Psychologische Forschung (Germany) 1932, v. 16, p. 166-170.

## BIOLOGICAL SCIENCES

Avila, Enrique.
THE NECESSITY OF A SYNALLAGMATIC AGREEMENT BETWEEN PERU AND CHILE ON THE PROTECTION OF SOME NATURAL RESOURCES, tr. by Petronila C. Prado. 13 Aug 59, 5p.
Order from LC or SLA mi$1.80, ph$1.80 59-19347

Trans. of Revista de Biologia Marina (Chile) 1951, v. 4, nos. 1-3, p. 239-243.

The ecology of the guano birds of the Peruvian and Chilean coast is considered, with special reference to the development of fisheries in the area. This exploitation is called economically irrational if not suicidal.

Ruderman, M.
CONTRIBUTION TO THE STUDY OF THE SWELLING OF CATGUT. [1959] 6p. 21 refs.
Order from SLA mi$1.80, ph$1.80 60-10602

Partial trans. (p. 18-24) of J[ournal de] Pharm[acie et de] Chim[ie] (France) 1939 [ser. 8] v. 30 [pt. 2] p. 16-34.

Sapozhnikov, D. I., Zidel'man, Z. M. and others.
HYDROXYLAMINE INHIBITION OF THE LIGHT REACTION IN XANTHOPHYLL TRANSFORMATION. [1959] [5]p. 15 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-20555

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1959, v. 127, p. 1128-1131.

Experiments are described which showed that the light reaction transforming xanthophylls can be inhibited completely by a specific hydroxylamine concentration. With increase in light intensity, the concentration of inhibitor necessary to stop the reaction rises. Assumptions about the enzymatic character of the light reaction of reciprocal transformation of xanthophylls, and about the close connection of this system with the oxygen transfer in photosynthesis, were confirmed.

### Anatomy and Physiology

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958, NO. 13 (Soviet Abstracts. Biology), 28 Oct 59, 162p. JPRS: 1981-N.
Order from OTS $1.00 59-13982

Contents:
Section T. Human and Animal Physiology. Abstracts 59953-60925.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Andreyev, S. V., Vadkovskaya, Yu. D., and Tarasova, A. N.
REFLEX PATHS OF THE ACTIVITY OF RENIN ON THE VASCULAR SYSTEM [O Reflektornom Puti Deystviya Renina na Sosudistuyu Sistemy i na Apterial'noye Davleniye]. [1959] [12]p. 1 ref.
Order from SLA mi$2.40, ph$3.30 60-10104

Trans. of Byull[eten'] Eksp[erimental'noy] Biol[ogii] i Med[itsiny] (USSR) 1952, v. 33, no. 3, p. 16-20.

Asmussen, Erling, Christensen, E. Hohwü and Sjöstrand, Torgny.
DEPENDENCE OF THE LUNG UPON BLOOD DISTRIBUTION (Über die Abhängigkeit der Lungenvolumen von der Blutverteilung) tr. by P. Hajdu. 6 July 59, 11p. (2 figs. omitted) 11 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-18228

Trans. of Skandinavisches Archiv für Physiologie (Germany) 1939, v. 82, no. 3/4, p. 193-200.

Asmussen, Erling and Christensen, E. Hohwü.
INFLUENCE OF BLOOD DISTRIBUTION ON THE CIRCULATION DURING EXERCISE (Einfluss der Blutverteilung auf den Kreislauf bei Körperlicher Arbeit) tr. by P. Hajdu. 2 July 59 [10]p. (4 figs. omitted) 4 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-18225

Trans. of Skandinavisches Archiv für Physiologie (Germany) 1939, v. 82, no. 3/4, p. 185-192.

Asmussen, Erling and Christensen, E. Hohwü.
MEAN CAPACITY OF THE LUNGS WITH INCREASED $O_2$ REQUIREMENT (Die Mittelkapazität der Lungen bei Erhöhtem $O_2$ -Bedarf) tr. by P. Hajdu. 6 July 59, 12p. (7 figs. omitted) 8 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-18227

Trans. of Skandinavisches Archiv für Physiologie (Germany) 1939, v. 82, no. 3/4, p. 201-211.

Asmussen, Erling, Christensen, E. Hohwü and Nielsen, Marius.
$O_2$ INTAKE OF RESTING AND WORKING SKELETAL MUSCLES (Die $O_2$ -Aufnahme der Ruhendem und der Arbeitenden Skelettmuskeln) tr. by P. Hajdu. 7 July 59, 13p. (1 fig. omitted) 7 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-18226

Trans. of Skandinavisches Archiv für Physiologie (Germany) 1939, v. 82, no. 3/4, p. 212-220.

Buschke, Wilhelm.
EFFECT OF THE MELANOPHORE HORMONE ON THE ADAPTATION OF HUMAN EYE TO THE DARK, tr. by P. M. M. 6 Apr 53, 6p. (1 fig. omitted) 9 refs.
Order from SLA mi$1.80, ph$1.80 60-10622

Trans. in manuscript of Klin[ische] W[o]ch[en]schr[ift] (Germany) 1934, v. 13 [no. 50] p. 1785-1786.

Heidenhain, M.
THE TASTE BUDS AS THE SUBJECT OF A GENERAL THEORY OF ORGANIZATION (Über die Geschmacksknospen als Objekt einer allgemeinen Theorie der Organisation) tr. by P. Pallamary. 30 June 59, 19p. 3 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-18136

Trans. of Münchener Med[izinische] W[ochenschrift] (West Germany) 1918, v. 65, May, p. 579-581.

Jores, Arthur.
MELANOPHORE HORMONE AND THE EYE, tr. by P. M. M. 6 Mar 53, 10p. 9 refs.
Order from SLA mi$1.80, ph$1.80 60-10624

Trans. in manuscript of Klin[ische] W[o]ch[en]schr[ift] (Germany) 1933, v. 12 [no. 41] p. 1599-1601.

Quadbeck, G. and Helmchen, H.
THE BLOOD-BRAIN BARRIER (die Blut-Hirnschranke) tr. by W. H. Everhardy. 25 Aug 59, 24p. (5 figs. omitted) 79 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-19056

Trans. of D[eutsche] Med[izinische] W[ochenschrift] (West Germany) 1957, v. 82, p. 1377-1382.

Rainville, M. J.
NEW METHOD OF MASKING FOR THE DETERMINATION OF BONE CONDUCTION CURVES (Nouvelle Méthode d'Assourdissement pour le Relevé des Courbes de Conduction Osseuse) ed. by Charles Lightfoot. July 59, 10p. 4 refs.
Order from BIHR BIHR-11

Trans. of Journal Française d'Oto-Rhino-Laryngologie, 1955, v. 4, no. 8, p. 851-858.

Schuster, F.
ALLOWABLE FORCES ON FOOT OPERATED MACHINES AND DEVICES. [1959] 7p. (7 figs. omitted) 2 refs.
Order from SLA mi$1.80, ph$1.80 59-20490

Trans. of Maschinenbau (Germany) 1939 [v. 18, no. 13/14] p. 331-333.

## Biochemistry

Barkan, Georg.
NEW STUDIES OF IRON-CONTAINING SUBSTANCES THAT ACCOMPANY HEMOGLOBIN. [1959] 10p.
Order from SLA mi$1.80, ph$1.80 60-10634

Trans. of Klin[ische] W[o]ch[en]schr[ift] (Germany) 1937, v. 16 [no. 37] p. 1265-1268.

Bingold, K.
SIGNIFICANT MECHANISMS IN THE BREAKDOWN OF BLOOD PIGMENT. [1959] 10p. 10 refs.
Order from SLA mi$1.80, ph$1.80 60-10618

Trans. of Klinische Wochenschrift (Germany) 1941, v. 20, no. 14, p. 331-334.

Boeri, Enzo and Vescia, Allesandro.
THE OXYGENATION OF HEMOGLOBIN OF NORMAL AND REDUCED MOLECULAR WEIGHT IN DILUTE SOLUTIONS. [1959] [8]p. 18 refs.
Order from SLA mi$1.80, ph$1.80 60-10455

Trans. of Arch[ives] Néerlan[aises de] Physiol[ogie de l'Homme et des Animaux] (Netherlands) 1947, v. 28 [no. 3/4] p. 510-520.

It was confirmed that the hemoglobin in dilute solutions has sigmoid curves and that its affinity for $O_2$ increases with the dilution. The analyses of our experimental data and of the data in the literature by means of the stoichiometric equation showed that neither the dilution nor the adsorption on alumina cream change the degree of aggregation of the Hb molecule and that the fetal hemoglobin presents four groups of heme per molecule. Hb in 6.66 M urea does not lose the capacity to bind $O_2$ reversibly, and the saturation curve which this presents is in general an equilateral hyperbola; there is a considerable increase of the affinity for $O_2$. (Extracted from author's summary)

Chemnitius, F.
THE TECHNIQUE RENNET MANUFACTURE. [1959] 4p.
Order from SLA mi$1.80, ph$1.80 60-10355

Trans. of Chemiker Zeitung (Germany) 1929, v. 53 [no. 73] p. 705-706.

Claes, Hedwig.
BIOSYNTHESIS OF CAROTENOIDS BY CHLORELLA. IV. CAROTENE SYNTHESIS OF A CHLORELLA-MUTANT BY ANAEROBIC EXPOSURE. [1959] 6p. 1 ref.
Order from SLA mi$1.80, ph$1.80 60-10718

Trans. of Zeitschrift fllr Naturforschung (West Germany) 1958, v. 13b [no. 4] p. 222-224.

Cohen, Georges N. and Rickenberg, Howard V.
REVERSIBLE SPECIFIC CONCENTRATION OF AMINO ACIDS IN ESCHERICHIA COLI (Concentration Spécifique Réversible des Amino Acides chez Escherichia coli) tr. by W. H. Everhardy. 3 June 59, 42p. (4 figs. omitted) 23 refs.
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Order from SLA mi$1.80, ph$1.80 60-10677

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Order from SLA mi$1.80, ph$1.80 60-10635

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INVESTIGATION OF THE ACTION OF HALIDES ON PROTEINS. Preliminary rept. [1959] 4p. 2 refs.
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Order from SLA mi$1.80, ph$1.80 60-10486

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INFLUENCE OF METALLIC IONS AT THE SURFACE FERMENTATION. Rept. no. 2 on Studies about the Production of Citric Acid by Fermentation. [1959] 18p. (10 figs omitted) 14 refs.
Order from SLA mi$2.40, ph$3.30 60-10664

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Order from SLA mi$1.80, ph$1.80 60-10689

Trans. of Soc[iété de] Biol[ogie et de ses Filiales]. Compt[es] Rend[us des Séances] (France) 1949, v. 143 [no. 17/18] p. 1366-1369.

The prolonged action of ribonuclease on bacteria caused a complete disappearance of the ability to be stained by the Gram stain and at the same time a thinning of the protoplasm took place. However, after a short action, granules of different sizes, stained dark violet appeared, and they did not seem to be uniformly distributed within the protoplasm. These granules by no means resemble a granular deposit of the dye. The appearance of these irregular granules is attributed to the action of ribonuclease because preparations treated with distilled water under the same conditions remain stained uniformly dark violet after the Gram stain. (Extracted from the report)

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FROM TISSUES OF HIGHER PLANTS (Ricerche sull'Azione Inibente di Alcune Antiauxine sull'Attivita di Deidedrogenasi delle Frazioni Solubile e Mitocondriale di Estratti di Tessuti di Piante Superiori). [1959] [36]p.
Order from SLA mi$3.00, ph$6.30 60-10703

Trans. of Nuovo Giornale Botanico Italiano, 1954, v. 61, 23 Oct, p. 214-235.

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Order from SLA mi$2.40, ph$3.30 60-10494

Trans. in manuscript of [Naunyn-Schmiedeberg's] Arch[iv für] Exp[erimentelle] Pathol[ogie und] Pharmakol[ogie] (West Germany) 1952, v. 214 [no. 4] p. 374-380.

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ACTION OF PEPSIN AND TRYPSIN ON THYROGLOBULIN AND ON ARTIFICIALLY IODINATED PROTEINS HABITED WITH IODINE II. ENZYMATIC HYDROLYSIS AND CHROMATIC SEPARATION OF LIBERATED IODIZED AMINO ACIDS. 23 Mar 56, 3p. [refs. omitted].
Order from SLA mi$1.80, ph$1.80 60-10685

Partial trans. (p. 145-146 and 155) of Soc[iété de] Chim[ie] Biol[ogique]. Bull[etin] (France) 1954, v. 36, p. 143-157.

Roche, Jean, Michel, Odette and others.
RADIOACTIVE IODINE AS INDICATOR OF HUMAN THYROGLOBULIN IN THE NORMAL STATE AND IN BASEDOW'S DISEASE, tr. by P. M. M. 10 Feb 52 14p. (4 figs. omitted) 11 refs.
Order from SLA mi$2.40, ph$3.30 60-10497

Trans. in manuscript of Ann[ales d'] Endocrinol[ogie] (France) 1952, v. 13 [no. 1] p. 1-8.

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A THYROGLOBULIN, ARTIFICIALLY IODINATED PROTEIN, AND THYROID HORMONE, tr. by P. M. M. 31 Dec 52, 24p. (3 figs. 1 formula, refs. omitted).
Order from SLA mi$2.70, ph$4.80 60-10498

Trans. in manuscript of Ann[ales d'] Endocrinol[ogie] (France) 1951, v. 12 [no. 3] p. 317-[332].

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Order from SLA mi$1.80, ph$1.80 60-10654

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A determination of the nicotinic acid content of the blood and urine of 47 subjects, 37 of whom presented symptoms of various skin disorders, is reported. Dermatitis patients apparently show frequent deviations from normal values.

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Order from SLA mi$1.80, ph$1.80 60-10659

Trans. of Società Italiana di Biologia Sperimentale. Boll[ettino] 1942, v. 17 [no. 3] p. 206-208.

Rossi, A. and Travia, L.
THE SPECIFICITY AND CHEMICAL COMPOSITION OF MYOGLOBIN IN DIVERSE SPECIES, I. [1959] 2p. (2 illus. omitted) 3 refs.
Order from SLA mi$1.80, ph$1.80 60-10653

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IMMUNOLOGIC STUDIES OF NUCLEOPROTEIN FRACTIONS OF EHRLICH CARCINOMA CELLS, tr. by William Himel. 1 June 59, 6p.
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NICOTINIC ACID AND MINERAL METABOLISM. II. INFLUENCE OF NICOTINIC ACID ON SERUM CALCIUM. [1959] [1]p. 2 refs.
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## General Biology

ON THE WRONG POSITION OF THE "BOTANICAL JOURNAL" AND ITS FURTHER WORK. [1959] 14p. 12 refs. Trans. A-1063.
Order from LC or SLA mi$2.40, ph$3.30 59-22320

Trans. of Botanicheskiy Zhurnal (USSR) 1959, v. 44, no. 2, p. 1-6.

The staff of Botanicheskii Zhurnal [Botanical Journal] which criticized the doctrines of Michurin as exemplified in the work of Lysenko has been replaced by a new editorial staff which condemns distortions of Lysenko's statements, and which will devote attention to actual problems of taxonomy and morphology of plants.

Dubinin, N. P.
PRINCIPAL FACTORS OF THE NATURAL MUTATION PROCESS (Ob Osnovnykh Faktorakh Yestestvennogo Mutatsionnogo Protsessa). [1959] 37p. 12 refs. Trans. A-1062.
Order from LC or SLA mi$3.00, ph$6.30 59-22319

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CULTIVATION OF INFECTIOUS CANINE HEPATITIS VIRUS (FOX ENCEPHALITIS) ON HEN'S EGGS, APPLIED TO THE FERRET, tr. by P. M. M. 17 Nov 52, 4p. 5 refs.
Order from SLA mi$1.80, ph$1.80 60-10720

Trans. in manuscript of Academie des Sciences [Paris]. Comptes Rendus (France) 1951, v. 233 [no. 3] p. 277-279.

Meissner, Gertrud and Hesse, Erich.
THE ANTIBIOTIC EFFECT OF ESCHERICHIA COLI ON MYCOBACTERIUM TUBERCULOSIS, tr. by P. M. M. Rept. no. 8 on Studies on the Chemotherapy of Tuberculosis. 29 Oct 52, 21p. (1 table omitted) 8 refs.
Order from SLA mi$2.70, ph$4.80 60-10495

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CERTAIN DIFFERENCES IN THE TULAREMIA PATHOGEN IN THE OLD AND NEW WORLD. 14 Oct 59, 13p. 18 refs. JPRS: L-1015-N.
Order from OTS $0.50 59-13938

Trans. of Akademiya [Meditsinskikh] Nauk SSSR. Vestnik, 1959, v. 14, no. 6, p. 51-58.

Wüstinger, G. Broda, E., and Schönfellinger, H.
MOST FAVORABLE CONDITIONS IN OBTAINING RADIOACTIVE TOBACCO MOSAIC VIRUS (Optimale Bedingungen für die Gewinnung von radioaktiven Tabakmosaikvirus). [1959] 7p. 11 refs.
Order from LC or SLA mi$1.80, ph$1.80 AEC-tr-3528

Trans. of Monatshefte für Chemie (Austria) 1955, v. 86 [no. 1] p. 131-136.

Leaves infected with tobacco mosaic virus were exposed to the assimilation of a radioactive carbon dioxide for 24 hours. A virus of the highest specific radioactivity was obtained, when shortly after the infection the leaves were subjected to radiophotosynthesis; the highest total activity upon the radiophotosynthesis showed at least in a month after the infection was made. A significant part of the activity was in the nucleic acid part of the molecule. When the infiltration of the radioglucose into the infected leaves with the following keeping in dark was carried out, a radioactive virus still could be observed. Thus, the assimilation of radiocarbon in the virus is not connected with the photosynthesis necessarily. (Author)

Zhuravlev, S. I.
DEVICE FOR BACTERIOLOGICAL SEEDINGS (Pribor dlya Bakeriologicheskikh Posevev). 20 Oct 59, 3p. (photo. omitted) Trans. V-1496.
Order from LC or SLA mi$1.80, ph$1.80 59-22299

Trans. of Veterinariya (USSR) 1959, v. 36, no. 8, p. 79.

## Neurology and Psychiatry

Hugelin, A. and Bonvallet, M.
CORTICAL TONUS AND CONTROL OF THE MOTOR FACILITATION OF RETICULAR ORIGIN (Tonus Cortical et Controle de la Facilitation Motrice d'Origine reticulaire). [1959] [35]p. 47 refs. AFOSR-TN-58-541; AD-158 357.
Order from LC or SLA mi$3.00, ph$6.30 59-16647

Trans. of J[ournal de] Physiol[ogie] (France) 1957, v. 49, p. 1171-1200.

Hugelin, A. and Bonvallet, M.
EXPERIMENTAL STUDY OF RETICULO-CORTICAL INTERRELATIONSHIPS, PROPOSAL FOR A THEORY OF THE SERVO CONTROL OF THE RETICULAR ACTIVITY BY A DIFFUSE CORTICAL SYSTEM (Etude Expérimentale des Interrelations Réticulo-corticales. Proposition d'une Théorie de l'Asservissement Reticulaire à un Système Diffus Cortical). [1959] [27]p. 8 refs. AFOSR TN 58-539; AD-158 355.
Order from LC or SLA mi$2.70, ph$4.80 59-16648

Trans. of J[ournal de] Physiol[ogie] (France) 1957, v. 49, p. 1201-1223.

Roskin, G. I. and Struve, N. Ye.
CYTOCHEMISTRY OF THIOL GROUPS IN THE SENSORY AND MOTOR NEURONS. 27 Oct 59, 8p. (1 fig. omitted) 19 refs. JPRS: L-1024-N.
Order from OTS $0.50 59-13959

Trans. of Akademiya Nauk SSSR. Doklady, 1959, v. 125, no. 3, p. 639-642.

## Pathology

FOR FURTHER RISE IN INVENTIVE WORK.
6 Oct 59, 7p. Trans. V-1485.
Order from LC or SLA mi$1.80, ph$1.80 59-22288

Trans. of Voyenno-Meditsinskiy Zhurnal (USSR) 1959, no. 7, p. 3-5.

Members of the Soviet military medical corps are encouraged to contribute suggestions for technical improvements and automatic devices useful in the medical service. It is noted that an apparatus for automatic narcosis has been invented, and that a rule has been worked out for calculation of absolute numbers of the leukocytic formula. Emphasis is placed on the need for new devices to lessen the load of attendants in combat conditions.

Anokhin, P. K.
WORKS OF PAVLOV ON CIRCULATION AND STUDY OF PATHOGENESIS OF HYPERTENSION. [1959] [12]p.
Order from LC or SLA mi$2.40, ph$3.30 60-10062

Trans. of Klin[icheskaya] Med[itsina] (USSR) 1949, v. 27, no. 9, p. 24-29.

Aubanel, Gustavo.
RESULTS OBTAINED IN TREATMENT OF ECLAMPTIC SYNDROMES IN PREGNANCY WITH INTRAVENOUS INJECTIONS OF PENTOTHAL SODIUM AND INHALATIONS OF OXYGEN (Resultados obtenides en el Tratamiento del Sindrome Eclámptico en el Embarazo, por Medio de las Inyecciones intravenosas de Pentothal Sódico e Inhalaciones de Oxigeno). [1959] [3]p.
Order from SLA mi$1.80, ph$1.80 59-17882

Trans. of [Medicina; Revista Mexicana] 1947, v. 27, 10 June, p. 250-252.

Bayer, Ludwig.
POSSIBILITY OF A NEW THERAPEUTIC TREATMENT OF ACUTE GASTRIC ULCERS [PT. I.] [1959] 40p. (23 illus. omitted) 1 ref.
Order from SLA mi$3.00, ph$6.30 60-10616

Trans. of Deutsche Med[izinische] W[ochen]schr[ift] (Germany) 1936, v. 62 [no. 16] p. 636-641.

[Bayer, Ludwig].
POSSIBILITY OF A NEW THERAPEUTIC TREATMENT OF ACUTE GASTRIC ULCERS, PT. II. [1959] 29p.
Order from SLA mi$2.70, ph$4.80 60-10615

Trans. of Deut[sche] Med[izinische] W[ochen]schr[ift] (Germany) 1936, v. 62 [no. 17] p. 679-683.

Coutinho-Abath, Eridan and Jamposlky, Ruth.
BEHAVIOR OF SCHISTOSOMA MANSONI CERGARIA IN EXPERIMENTAL INFESTATION OF REFRACTORY ANIMALS, I. HISTOPATHOLOGY OF CUTANEOUS REACTIONS OBSERVED ON DOMESTIC PIGEONS (COLUMBIA LIVIA DOMESTICA) (Comportamento das Cercarias de Schistosoma Mansoni na Infestacao Experimental de Animals Refratarios. I - Histopatologia das Reacoes Cutaneas Observadas no Pombo Domestico (Columba Livia Domestica)) tr. by Tatiana Boldyreff.
14 Jan 59 [18]p. (16 figs. and bibliography omitted).
Order from LC or SLA mi$2.40, ph$3.30 59-12699

Trans. of Sociedade de Biologia de Pernambuco. Anais (Brazil) 1957, v. 15, no. 1, p. 93-125.

Gädeke, Roland and Jacob, Wolfgang.
THYROID AND THE COURSE OF TUBERCULOSIS IN EXPERIMENTAL TUBERCULOSIS OF GUINEA PIGS WITH SPECIAL CONSIDERATION TO THE ACTION OF METHYLTHIOURACIL, tr. by P. M. M. 5 Apr 52, 6p. 1 ref.
Order from SLA mi$1.80, ph$1.80 60-10633

Trans. in manuscript of Klin[ische] W[o]ch[en]schr[ift] (Germany) 1951, v. 29 [no. 11/12] p. 229-230.

Inhibition of the thyroid function by methylthiouracil is shown to have an unfavorable effect on the course of tuberculosis.

Galy, P., Touraine, R. G. and Termet.
DIAGNOSIS AND CLINICAL PATHOLOGICAL CLASSIFICATION OF THYMIC TUMORS (Considerations sur le Diagnostic et la Classification Anatomo-clinique des Tumeurs du Thymus) tr. by D. L. Tuffanelli. Sep 59 [10]p. (12 figs. omitted).
Order from SLA mi$1.80, ph$1.80 60-10673

Trans. of Journal Français de Médicine et Chirurgie Thoraciques, 1958, v. 12, no. 4, p. 388-402.

Gerlich, Norbert.
TO THE QUESTION OF ENTERAL USE OF TRYPSIN, tr. by G. G. S. 22 Mar 51, 7p. 17 refs.
Order from SLA mi$1.80, ph$1.80 60-10609

Trans. in manuscript of Deutsche Medizinische Wochenschrift (West Germany) 1950, v. 75 [no. 27/28] p. 950.

Graffi, A.
EXPERIMENTAL STUDIES ON THE RELATION BETWEEN VIRUS AND TUMOR FORMATION (Experimentelle Untersuchungen zur Frage der Beziehung zwischen Virus und Geschwulstbildung) tr. by P. Hajdu. 4 Dec 58, 14p. (5 figs. 35 refs. omitted).
Order from LC or SLA mi$2.40, ph$3.30 59-12327

Trans. of [Die] Medizin[ische] (West Germany) 1956, no. 7, p. 418-421.

Hecht, E.
TREATMENT OF HEMOPHILIA. (Over de Behandeling van Haemophilie) tr. by P. Pallamary. 1 June 59, 11p. 11 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-16653

Trans. of Nederlands Tijdschrift voor Geneeskunde, 1942, v. 86, no. 3, p. 134-139.

A brief communication is made on the investigations which led to a symptomatic treatment of haemophilia, and on the chemical and physiological details of the therapeutic "Haemostypticum Hecht" ("H. H. "), so far as these appear to be important for the treatment of haemophilics. In this connection are further considered the factors(blood and vascular) active in the haemorrhage of haemophilia. Under reference to more detailed literature, a brief exposure is given on the application of "H. H. " in the stopping of bleeding in Haemophilia, the preparation for surgical intervention and continual treatment of haemophilics. In concluding attention is called to a number of other indications for the use of the preparation, which have developed in the course of recent years. (Author's summary)

Kahler, O. H.
CLINICAL EXPERIMENTS WITH CHOLE[C]YSMON, AN EXTRACT OF THE WALL OF THE GALL-BLADDER. [1959] 9p. 1 ref.
Order from SLA mi$1.80, ph$1.80 60-10613

Trans. in manuscript of Deutsche Med[izinische] Woch[en]schr[ift] (Germany) 1938, v. 64 [no. 17] p. 604-605.

Gallbladder wall extract, called cholecysmon, proved to be useful in treatment of disturbances following surgery of the gallbladder. It is also recommended for treatment of diarrhea caused by pancreatic insufficiency.

Klüppelberg, H.
THE RINSING TREATMENT OF TUBERCULAR AND MIXED-INFECTED THORACIC EMPYEME WITH TRYPSIN SOLUTION. [1959] 24p. 7 refs.
Order from SLA mi$2.70, ph$4.80 60-10608

Trans. in manuscript of Deut[sche] Med[izinische] Woch[en]schr[ift] (West Germany) 1950, v. 75 [no. 29/30] p. 987-990.

Marinesco, G., Turco, I. and others.
POLIOMYELITIC MYOCARDITIS (La Miocardite Poliomielitica) tr. by W. H. Everhardy. 29 Apr 59, 16p. (4 figs. omitted) 37 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-16015

Trans. of Minerva Med[ica] (Italy) 1957, v. 48, p. 2165-2168.

This study is based on 62 fatal cases of poliomyelitis observed in or near Bucharest during the years 1953-55. There was evidence of acute myocarditis in 46.8% of the cases.

Meuli, Hans Christoph
BLOOD-GROUP-SPECIFIC ANTI-ERYTHROCYTE AUTOANTIBODIES, tr. by William H. Everhardy. 10 Nov 58, 13p. 22 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-12107

Trans. of Blut (West Germany) 1957, v. 3, p. 270-275.

Myasnikov, A. L.
PATHOGENESIS AND TREATMENT OF HYPERTENSION IN THE LIGHT OF PAVLOV'S TEACHINGS. [1959] [19]p. 1 ref.
Order from LC or SLA mi$2.40, ph$3.30 60-10105

Trans. of Zhurnal Vysshey Nervnoy Deyatel'nosti (USSR) 1953, v. 3, no. 1, p. 55-70.

Parrella, M. T. and Resigno, B.
PULMONARY LOCALIZATIONS OF LEUKEMIA (Le Localizzazioni Polmonari della malattia Leucemica) tr. by Tatiana Boldyreff. 7 Sep 59, 15p. (31 refs. omitted).
Order from LC or SLA mi$2.40, ph$3.30 59-18489

Trans. of Arch[ivio di] Tisiol[ogia e delle Malattie dell'Apparato Respiratorio] (Italy) 1955, v. 10, p. 126-132.

Quiring, E., Perlia, Ch., and Nicole, G.
ACTH; CORTISONE AND TUBERCULOSIS, tr. by P. M. M. 13 May 54, 3p. [6 figs. omitted] 5 refs.
Order from SLA mi$1.80, ph$1.80 60-10606

Trans. of Helv[etica] Med[ica] Acta (Switzerland) 1953, v. 20 [no. 4/5] p. 346-351.

Rutishauser, E., Veyrat, R., and Rouiller, Ch.
THE VASCULARISATION OF THE PAGET'S BONE (La Vascularisation de l'Os Pagétique; Étude Anatomo-Pathologique) tr. by D. L. Tuffanelli. Oct 59 [10]p. (6 figs. 1 graph. omitted) 31 refs.
Order from SLA mi$1.80, ph$1.80 60-10657

Trans. of la Presse Médicale (France) 1954, v. 62 [no. 31] p. 654-657.

Vinogradov, I. G.
FROM AN EXPERIMENT ON THE ORGANIZATION OF INVENTIVE AND INNOVATIONAL WORK (Iz Opyta Organizatsii Izobretatel'skoy i Ratsionalizatorskoy Raboty). 2 Oct 59, 6p. Trans. V-1484.
Order from LC or SLA mi$1.80, ph$1.80 59-22287

Trans. of Voyenno-Meditsinskiy Zhurnal (USSR) 1959, no. 7, p. 6-7.

The work of a commission which was established in 1954 to encourage an inventive approach to problems of medical technology among medical personnel is described. Resulting innovations include a modification of the technique of blood transfusion, the designing of a small table to be used in surgery of the arm, and the development of a general-purpose splint.

Sors, Ch. and Roujeau, J.
TUMORS OF THE THYMUS; A CLINICAL ANATOMICAL CLASSIFICATION (Les Tumeurs du Thymus; a clinical anatomical Classification) tr. by D. L. Tuffanelli. Oct 59 [16]p. 25 refs.
Order from SLA mi$2.40, ph$3.30 60-10674

Trans. of Journal Français de Médicine et Chirurgie Thoraciques, 1958, v. 12 [no. 5] p. 469-484.

Weitzel, Günther.
BRANCHED FATTY ACIDS AND TUBERCULOSIS, tr. by P. M. M. 13 July 56, 3p.
Order from SLA mi$1.80, ph$1.80 60-10550

Partial trans. [p. 266-267] of Angew[andte] Chemie (West Germany) 1948, v. 60A [no. 10] p. 263-267.

## Pharmacology and Toxicology

ABOUT THE MANUFACTURE OF LIQUID BIOMYCIN PREPARATIONS (NATIVE BIOMYCIN). 20 Oct 59, 2p. Trans. V-1497.
Order from LC or SLA mi$1.80, ph$1.80 59-22300

Trans. from Veterinariya (USSR) 1959, v. 36, no. 8, p. 93.

BIOMYCIN PREPARATION "AKTIBIOS-M". 15 Oct 59, 1p. Trans. V-1493.
Order from LC or SLA mi$1.80, ph$1.80 59-22296

Trans. from Veterinariya (USSR) 1959, v. 36, no. 8, p. 93.

Aleksandrov, N. I., Gefen, N. E. and others.
EXPERIMENT OF MASS AEROGENIC VACCINATION OF PEOPLE AGAINST ANTHRAX (Opyt Massovoy Aerogennoy Vaktsinatsii Lyudey Protiv Sibirskoy Yazvy). 2 Oct 59, 13p. 3 refs. Trans. V-1483.
Order from LC or SLA mi$2.40, ph$3.30 59-22286

Trans. of Voyenno-Meditsinskiy Zhurnal (USSR) 1959, no. 8, p. 27-32.

Results of the first experimental mass aerogenic vaccination using dry vaccine produced from strains ST1-1 and 3 are reported. The vaccine, which produces no reaction but which nevertheless sets off "an immunological reorganization" in the vaccinated persons, was administered simultaneously to groups of about 50 persons. Details of the measurements of the rooms in which the exposures were conducted are given, but there is no description of the atomizing apparatus used. 300 persons were vaccinated in the course of one hour. In time of emergency a team of 5 or 6 men, using tents, could vaccinate up to 1,000 or more persons in an hour.

Alia, J.
QUATERNARY AMMONIUM COMPOUNDS USED IN DISINFECTANTS. [1959] 2p.
Order from SLA mi$1.80, ph$1.80 60-10515

Partial trans. (p. 63-64) of Anales de Bromatol[ogia] (Spain) 1951, v. 3, p. 53-65.

Apra, L. d'
FIRST RESULTS OF THE EFFECT OF A COMBINATION OF ALUMINUM-GLYCINE SALTS ON INTESTINAL CHEMISTRY, tr. by P. M. M. 3 May 52, 4p.
Order from SLA mi$1.80, ph$1.80 60-10008

Trans. in manuscript of Minerva Medica (Italy) 1950, v. 41, p. 1057.

Beauvillain, Arthur and Boilot, Ivonne.
THE CONVULSIVE ACTION OF INSULIN IN ALBINO RATS. APPLICATION TO THE TITRATION OF THE HORMONE. [1959] 2p.
Order from SLA mi$1.80, ph$1.80 60-10646

Trans. of Société de Biologie et de ses Filiales. Comptes Rendus des Séances (France) 1942, v. 136, p. 322.

Biava, Luigi.
ACTION OF NICOTINIC ACID ON THE DIASTASES OF THE BLOOD AND URINE. [1959] 2p.
Order from SLA mi$1.80, ph$1.80 60-10663

Trans. of Soc[ieta] Ital[iana di] Biol[ogia] Sper[imentale]. Boll[ettino] 1940, v. 15, p. 1054-1056.

Dingemanse, E.
ON THE PURIFICATION OF INSULIN. [1959] 3p. (tables omitted) 3 refs.
Order from SLA mi$1.80, ph$1.80 60-10488

Partial trans. (p. 259-262) of Archives Néerlandaises de Physiologie de l'Homme et des Animaux (Netherlands) 1928, v. 12, p. 259-264.

Dolder, R.
REDOX SYSTEMS IN PHARMACY, I.(Redoxsysteme in der Pharmazie). [1959] [24]p. 7 refs.
Order from SLA mi$2.70, ph$4.80 59-20879

Trans. of Pharmaceutica Acta Helvetiae (Switzerland) 1951, v. 26 [no. 3] p. 77-91.

Dolder, R.
REDOX SYSTEMS IN PHARMACY, REPT. 4. (Redoxsysteme in der Pharmazie). [1959] [28]p. 54 refs.
Order from SLA mi$2.70, ph$4.80 59-20869

Trans. of Pharmaceutica Acta Helvetiae (Switzerland) 1952, v. 27 [no. 9] p. 235-250.

Fraja, A. and Martini, L.
PASSAGE OF THYROTROPIC HORMONE INTO THE CIRCULATION. [1959] 9p. 21 refs.
Order from SLA mi$1.80, ph$1.80 60-10490

Trans. of Arch[ives] Intern[ationales de] Pharmacodynamie [et de Thérapie] (Belgium) 1953, v. 93 [no. 2] p. 167-176.

We determined the thyrotropic hormone in the circulating blood in various dogs subjected to different experimental conditions. We observed that the postpituitary hormones and especially oxytocin, cause release of thyrotropic hormone from the anterior pituitary lobe. p-Hydroxypropiophenone, which under normal conditions inhibits the passage of thyrotropic hormone into the circulation, loses this characteristic action when the hypophysis is stimulated by thyroidectomy. (Author)

Grüter, F. and Stricker, P.
EFFECT OF THE ANTERIOR PITUITARY HORMONE ON STIMULATING MILK SECRETION, tr. by P. M. M. 7 Apr 54, 4p. 1 ref.
Order from SLA mi$1.80, ph$1.80 60-10620

Trans. of Klin[ische] W[ochen]sch[rift] (Germany) 1929, v. 8 [no. 50] p. 2322-2323.

Lang, K.
IS BORIC ACID HARMFUL? [1959] 4p.
Order from ATS $5.75 ATS-07L32G

Trans. of Deut[sche] Drogisten Z[ei]t[un]g (West Germany) 1950, v. 5, p. 565-566.

Loeser, Arnold.
THE PREPARATION OF THYRATROPHIC EXTRACTS FROM THE ANTERIOR PITUITARY LOBE, tr. by P. M. M. [1959] 5p.
Order from SLA mi$1.80, ph$1.80 60-10626

Trans. in manuscript of Klin[ische] W[o]ch[en]schr[ift] (Germany) 1932, v. 11 [no. 30] p. 1271-1272.

Mendive, J. R.
PREPARATION OF INSULIN AND ITS DERIVATIVES. [1959] 8p. 14 refs.
Order from SLA mi$1.80, ph$1.80 60-10692

Trans. of Folia Biologica (Argentina) 1938 [no. 79/82] p. 347-351.

Miroshnikov, I. V. and Zapol'skiy, G. N.
PROTECTING THE POPULACE FROM MODERN MEANS OF ATTACK: SELECTIONS. 19 Oct 59, 67p. JPRS: L-1016-N.
Order from OTS $1.25 59-13941

Trans. of mono. Zashchita Naseleniya Ot Sovremennykh Sredstv Porazheniya, Moscow, 1958, p. 3-4, 55-77, 161-185 and 251-264.

Rabbi, A., Viviani, R., and Marchetti, M.
VITAMIN $B_{12}$ CONTENT OF THE LIVER IN THYROXIN-TREATED RATS, tr. by P. M. M. 8 Mar 56, 3p. [1 table refs. omitted].
Order from SLA mi$1.80, ph$1.80 60-10508

Trans. of Acta Vitaminolo[gica] (Italy) 1954, v. 8 [no. 2] p. 85-87.

Salvini, M.
PHARMACOLOGICAL EFFECTS OF NICOTINIC ACID. [1959] 2p.
Order from SLA mi$1.80, ph$1.80 60-10670

Trans. of Societa Italiana di Biologia Sperimentale. Bollettino, 1947, v. 23, p. 907-908.

Schindler, O. and Reichstein, T.
VITAMIN $B_{12}$. III. ISOLATION OF VITAMIN $B_{12}$ FROM LIVER EXTRACT AND FROM THE RESIDUES OF STREPTOMYCIN MANUFACTURE: 1, EXPERIMENTS WITH VITAMIN $B_{12}$, tr. by P. M. M. 20 May 52, 9p. 24 refs.
Order from SLA mi$1.80, ph$1.80 60-10742

Trans. of Helv[etica] Chim[ica] Acta (Switzerland) 1952, v. 35, p. 307-316.

Schneider, Erich.
THE VITAMIN ACTION OF UNSATURATED FATTY ACIDS. [1959] 7p. (3 tables omitted) 20 refs.
Order from SLA mi$1.80, ph$1.80 60-10617

Trans. of Klinische Wochenschrift (Germany) 1941, v. 20, no. 18, p. 437-440.

Schubert, René
FUNDAMENTAL IDEAS AND EXPERIMENTS ON EXPERIMENTAL AND CLINICAL TREATMENT WITH TOXOBIN. REPT. NO.1 (Ideas Fundamentales y Ensayos Referentes a la Terapéutica Experimental y Clínica con Toxibín) tr. by W. H. Everhardy. 1958, 17p. 7 figs. omitted.
Order from LC or SLA mi$2.40, ph$3.30 59-12419

Trans. of Med[icina] Espan[ola] (Spain) 1956, v. 36, p. 91-101.

## Radiobiology

MEDICAL RADIOLOGY, 1959, VOL. 4, NO. 7, P. 3-95. 9 Nov 59, 172p. JPRS: 1970-N.
Order from OTS $3.00 59-13991

Trans. of Meditsinskaya Radiologiya (USSR) 1959, v. 4, no. 7, p. 3-95.

Jammet, H., Mathe, G. and others.
STUDY OF SIX CASES OF ACCIDENTAL ACUTE WHOLE-BODY IRRADIATION. [1959] 30p. (4 figs. omitted) 12 refs.
Order from LC or SLA mi$2.70, ph$4.80 AEC-tr-3774

Trans. of Revue Français d'Études Cliniques et Biologiques (France) 1959, v. 4 [no. 3] p. 210-225.

Six persons were accidentally exposed while working near an atomic reactor to sublethal, lethal and supralethal doses of radiation. The clinical course confirmed the physical findings just as the magnitude of the dose paralleled the severity of the signs and symptoms. After a phase of initial shock and a latent period of about three weeks, an extremely serious hematologic crisis occurred and that brought the authors to attempt homologous grafts of bone marrow cells in five of the cases. In four cases, a rapid improvement followed. However the patient who had received supralethal doses of radiation died from visceral complications. The sixth patient, who had been the less irradiated and in whom the graft had not been attempted, recovered spontaneously but slowly. (Authors' summary)

## CHEMISTRY

*AKADEMIYA NAUK SSSR. OTDELENIYE KHIMICHESKIKH NAUK. IZVESTIYA, 1959 (News of the Academy of Sciences of the USSR Department of Chemical Sciences).
Order from OTS $0.70, $4.00/6 mo.
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No. 7, p. 1147-1352, PB 141 055T-20
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Consists of abstracts in English

JOURNAL OF APPLIED CHEMISTRY OF THE USSR, 1958, VOL. 31, NO. 11, P. 1605-1760. 1959, 1v.
Order from CB $7.50, $60.00/year

Trans. of Zhurnal Prikladnoy Khimii (USSR) 1958, v. 31, no. 11, p. 1617-[1768].

JOURNAL OF APPLIED CHEMISTRY OF THE USSR, 1958, VOL. 31, NO. 12, P. 1761-1936. 1959, 1v.
Order from CB $7.50, $60.00/year

Trans. of Zhurnal Prikladnoy Khimii (USSR) 1958, v. 31, no. 12, p. 1769-[1902].

LENINGRAD U. VESTNIK (USSR) 1959 [VOL. 14, NO. 10] SERIYA FIZIKI I KHIMIYI, NO. 2, P. 5-158 (Herald of Leningrad University, Physics and Chemistry Series). [1959] 1v. SOV-54-59-2-(1-24)/24.
Order from OTS $0.60, $2.25/year PB 141 050T-7
Foreign $0.85, $3.25/year

Consists of abstracts in English.

## Analytical Chemistry

DEVICE FOR DETERMINATION OF WATER IN INSULATING OIL BY THE SPATTER TEST, tr. by J. C. Levy. 15 Sep 59, 2p. (1 illus. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-19746

Trans. of German patent 457,992, cl. 42L, gr. 7, pat. from 2 Sep 25, granted 15 Mar 28, pub. 29 Mar 28, by

Siemens-Schuckertwerke Akt.-Ges., Berlin-Siemensstadt.

The device is characterized by a small and flat metal tube which is closed at one end and is to be immersed in the oil, the spatter noises being thereby conducted to a microphone or hearing tubes.

Janak, J., Komers, R., and Sima, J.
GAS CHROMATOGRAPHY OF MONOHYDRIC PHENOLS. [1959] 17p.
Order from ATS $19.85 ATS-74L33G

Trans. of [Sbornik Chekhoslovatskykh Khimicheskykh Rabot] 1959, v. 24, p. 1492-1508.

Müller, P. B.
THE CALORIMETRIC STANDARDIZATION OF THE ACTIVITY OF ADSORPTION MEDIA WITH SPECIAL CONSIDERATION FOR ALUMINUM OXIDE (Zur Kalorimetrischen Standardisierung der Aktivität von Adsorptionsmitteln für die Chromatographische Analyse unter besonderer Berücksichtigung des Aluminiumoxyds). [1959] 35p. (1 fig. omitted) 10 refs.
Order from SLA mi$3.00, ph$6.30 60-10435

Trans. of Helvetica Chimica Acta (Switzerland) 1943, v. 26 [no. 5-8] p. 1945-1965.

Satake, Kazuo and Seki, Tokuichiro.
PAPER CHROMATOGRAPHY OF HYDRAZIDES OF FATTY ACIDS (Shibō-San Hidorachiddo no Pēpā Kuromatograffi), tr. by J. R. W. [1959] [9]p. (illus. omitted) 13 refs. H-2852A.
Order from OTS $0.50 59-21025

Trans. of Kagaku no Ryoiki (Japan) n.d., p. 557-561.

By ordinary methods, homologues of fatty acids that are very difficult to detect, could be detected by using hydrazine derivatives produced from their esters, their barium salts, or from their free acids. Lactic acid could also be detected. (Author)

Schulte, K. E. and Storp, C. B.
PAPER CHROMATOGRAPHIC ANALYSIS OF ALDEHYDES AND KETONES. I. DETECTION AND SEPARATION OF ALDEHYDES AND KETONES ON PAPER, tr. by P. M. M. 21 Dec 56, 15p. 14 refs.
Order from SLA mi$2.40, ph$3.30 60-10413

Trans. of Fette Seifen Anstrichmittel (West Germany) 1955, v. 57 [no. 1] p. 36-42.

In order to study the behavior of aldehydes on paper in the presence of other contents in ethereal oils or perfume mixtures, the effect of the simultaneous presence of terpinoles, limonenes, santalenes, pinenes, decyl alcohol, geraniol, eugenol, benzyl alcohol, citric acid, benzoic acid, cinnamic acid, propionic acid, ionone, phthalic acid diethyl ester, hydroquinone and phenol was investigated. The aldehydes were always mixed with these substances at a ratio of 1:1, 1:4 and 1:9 and were subjected to chromatographic determination. The aldehydes are rendered visible with the reagents mentioned. Separations of aldehydes in the presence of accompanying substances succeeded in the same way as with pure aldehyde mixtures. Separations of aldehydes from accompanying substances were observed when the latter went into a color reaction with the developer used, as for example, ionone with a benzidine solution and terpinolene, geraniol and eugenol with Schiff's reagent. In part, $R_f$ value displacements of 0.01 to 0.03 and a slightly different diffusion of the spots were observed as compared with pure aldehydes. In addition to the $R_f$ value the identification is made by comparing the colors of the spot produced by the accompanying substance and by the aldehyde. 2.4-Dinitrophenylhydrazin solution of hydrochloric acid with zivetone, muscone, menthone, camphor and methylheptenone gives yellow color reactions, with methylnonyl ketone a delicate orange, with iron, ionone and methylionone and the isomers thereof orange color reactions and with methylacetophenone deep orange colors. The coloring of the paper is pale yellow. The color spots last for several days, but as the chromatogram gets older the color of the paper becomes stronger. For this reason the most favorable time of utilization, as in the case of aldehydes is directly after drying.

Sternon, F. and Nihoul-Ghenne, L.
THE PRECIPITATION OF TANNING PRINCIPLES BY SOME METAL SALTS, tr. by P. M. M. 12 Sep 51, 13p.
Order from SLA mi$2.40, ph$3.30 60-10564

Trans. in manuscript of Soc[iété] Roy[ale des] Sci[ences de] Liége. Bull[etin] (Belgium) 1942, v. 11, p. 598-605.

Villard, R[odolphe] and Marchetti, Monique.
ANALYSIS OF HEAVY WATER WITH A HIGH DEUTERIUM OXIDE CONTENT BY GRAVIMETRIC METHODS [L'Analyse des Eaux Denses à Forte Teneur en Oxyde de Deterium par les Methodes Densimétriques]. [1959] 16p. 24 refs. AERE trans. 11/3/5/211; C. E. A. no. 38.
Order from LC or SLA mi$2.40, ph$3.30 AEC-tr-1299

Trans. of [Société Chimique de France. Bulletin, 1949, 5. ser, v. 16, p. 0.265-271]. (Commissariat à l'Energie Atomique. Rapport (France) 1949, no. 38, p. 265-271).

A semimicrodensimetric hydrometer method is presented for the analysis of small (2- to 3-cc) samples of heavy water with a high deuterium-oxide content. The formula used for determining the content by weight of deuterium oxide in heavy water is

$$x = \frac{f_t - d_t}{D_t - d_t} \cdot \frac{D_t}{f_t},$$

where t represents temperature, $D_t$ the specific gravity of the deuterium oxide, $d_t$ that of the water, and $f_t$ that of the float.

Wieland, Th. and Feld, Ursula.
RETENTION ANALYSIS. V. PAPERCHROMATOGRAPHY AN IONOPHORESIS OF HYDROXY-CARBOXYLIC ACIDS AND THEIR QUANTITATIVE DETERMINATION, tr. by P. M. M. 10 Aug 55, 4p. (2 figs. omitted) 3 refs.
Order from SLA mi$1.80, ph$1.80 60-10554

Trans. of Angew[andte] Chem[ie] (West Germany) 1951, v. 63 [no. 11] p. 258-259.

## Inorganic Chemistry

INORGANIC CHEMICALS: 1. BORON COMPOUNDS. 2. SILICON AND GERMANIUM. 3. METALS AND METALLIC COMPOUNDS. 4. SELENIUM AND SULFUR. 5. DIVERSE PROCESSES AND STUDIES. [1959] 7p.
Order from RIS RIS TB-182

Abstracts of trans. from German and Belgian patent literature and Russian, French, German and Spanish research papers.

INORGANIC CHEMICALS: 1. BORON COMPOUNDS. 2. SILICON, GERMANIUM AND THEIR COMPOUNDS. 3. URANIUM, THORIUM AND THEIR COMPOUNDS. 4. GROUP IV B TO VI B ELEMENTS. 5. RARE EARTHS. 6. SULFUR, SELENIUM AND THEIR COMPOUNDS. 7. DIVERSE PROCESSES AND STUDIES. [1959] 8p.
Order from RIS RIS TB-181

Abstracts of trans. from current Russian and German articles and research papers and German patent literature.

Bues, W. and Gehrke, H. W.
VIBRATION SPECTRA OF MELTS, GLASSES AND CRYSTALS OF SODIUM DI-, TRI-, AND TETRAPHOSPHATES (Schwingungsspektren von Schmeizen, Glasern und Kristallen des Natrium-di-, tri- und -Tetraphosphats) tr. by G. M. Wolten. [1959] 11p. 18 refs. (foreign text included).
Order from LC or SLA mi$2.40, ph$3.30 AEC-tr-3566

Trans. of Zeitschrift fllr Anorganische Chemie (East Germany) 1956, v. 288, p. 291-306.

Vibration spectra of melts and glasses in the system $NaPO_3$-$Na_4P_2O_7$ are described and assigned. At stochiometric compositions of the melt, tri- and tetraphosphate ions exist as definite poly-anions at temperatures slightly above the liquidus in the system $NaPO_3$-$Na_4P_2O_7$. If certain conditions are rigidly observed, glasses may be obtained from these melts, consisting of definite poly-anions to the extent of at least 97%.

Funk, Herbert.
PRODUCTS OF THE ACTION OF WATER ON DIFFERENT FORMS OF $Ca_2SiO_4$ at 120°C to 350°C AND CONDITIONS OF THEIR FORMATION. [1959] 18p. 18 refs.
Order from SLA mi$2.40, ph$3.30 60-10702

Trans. of Z[eitschrift für] Anorg[anische] Chem[ie] (East Germany) 1958, v. 297, p. 103-120.

Up to temperatures of about 160°C, $\gamma$-, $\alpha'$- and $\beta$-$Ca_2SiO_4$ are primarily hydrated to a tobermorite-like phase (I), with a maximum content of calcium according to 2 CaO. $SiO_2$ . 2 $H_2O$. All forms of $Ca_2SiO_4$ are hydrated in the range 160 to 350°C to dicalcium silicate hydrate (C), 2 CaO . $SiO_2$ . 0.3 $H_2O$, which has two crystalline modifications. Another hydrate, dicalcium silicate hydrate (A), is formed slowly from (I) between 120 and 180° C, or rapidly and completely, from all forms of $Ca_2SiO_4$ in the temperature range 100 to 200°C if seed crystals of (A)- hydrate are present. There is evidence of the formation of 2 CaO. $SiO_2$ . 0.5 $H_2O$ at 350°C. The formation of afwillite, $Ca_3(HSiO_4)_2$ . 2 $H_2O$, by hydrolysis of $\beta$-$Ca_2SiO_4$ in the range 120 to 150° C is discussed. (Published English summary.)

Juza, R.
THE NITRIDES OF METALS OF THE FIRST LONG PERIOD, tr. by R. E. P. 27 Apr 54, 18p. (5 figs. 1 table footnotes omitted).
Order from SLA mi$2.40, ph$3.30 60-10258

Trans. of die Chemie (Germany) 1945, v. 58, p. 25-30.

Meyer, F. R. and Ronge, Grete.
REMOVAL OF OXYGEN FROM GASES WITH ACTIVATED COPPER. [1959] 8p. 3 refs.
Order from LC or SLA mi$1.80, ph$1.80 AEC-tr-3744

Trans. of Angew[andte] Chem[ie] (Germany) 1939, v. 52, [no. 35] p. 637-638.

Morozov, I. S. and Toptygin, D. Ya.
REACTION OF TITANIUM TETRACHLORIDE WITH CHLORIDES OF TANTALUM, NIOBIUM AND ALUMINUM. [1959] 9p. 7 refs.
Order from LC or SLA mi$1.80, ph$1.80 AEC-tr-3741

Trans. of [Zhurnal Neorganicheskoy Khimii] (USSR) 1957, v. 2 [no. 8] p. 1915-1921.

The systems $TiCl_4$-$TaCl_5$, $TiCl_4$-$NbCl_5$ and $TiCl_4$-$AlCl_3$ have been studied by the methods of solubility and thermal analysis. The systems $TiCl_4$-$TaCl_5$-$NbCl_5$, $TiCl_4$-$NbCl_5$-$AlCl_3$, and $TiCl_4$-$TaCl_5$-$AlCl_3$ have been studied by the method of thermal analysis. It has been found that the solubilities of $TaCl_5$ and $NbCl_5$ are of the same order of magnitude. It has been found that the solubility of $NbOCl_3$ in titanium tetrachloride does not exceed a few hundredths of one percent at low temperatures. It has been found that chemical interaction takes place

between aluminum chloride and sodium chloride in a solution of titanium tetrachloride. The solubility of $TaCl_5$ and $NbCl_5$ in titanium tetrachloride is increased in the presence of aluminum chloride. (Author)

Morozov, I. S. and Toptygin, D. Ya.
SOLUBILITY OF FERRIC CHLORIDE AND ITS ALLOYS WITH NIOBIUM, ALUMINUM, AND SODIUM CHLORIDES IN TITANIUM TETRACHLORIDE. [1959] 10p. 7 refs.
Order from LC or SLA mi$1.80, ph$1.80 AEC-tr-3748

Trans. of [Zhurnal Neorganicheskoy Khimii] (USSR) 1957, v. 2 [no. 9] p. 2129-2135.
Another translation is available from LC or SLA mi$1.80, ph$1.80 as 59-18733, DSIR LLU M. 103 [1959] 10p.

The system $TiCl_4$-$FeCl_3$ was studied by the method of thermal analysis. 0.5% of ferric chloride dissolves in titanium tetrachloride at 204°. Less than 0.01% of ferric chloride dissolves at room temperature. Systems $TiCl_4$-$FeCl_3$-$AlCl_3$ and $TiCl_4$-$FeCl_3$-$NbCl_5$ were studied by the method of thermal analysis. The solubility of ferric chloride in titanium tetrachloride increases in presence of aluminum chloride and niobium pentachloride. The system $FeCl_3$-NaCl was studied throughout the entire range of concentrations. The system $TiCl_4$-$FeCl_3$-NaCl was studied. It was found that sodium chloride completely salted ferric chloride out of its solutions in titanium tetrachloride. (Author)

Ragozina, T. A.
HYDROLYSIS AND HYDRATION OF β-CALCIUM ORTHOSILICATE IN SOLUTIONS OF SALTS (Gidroliz i Gidratsiya β-Orsilikata v Rastvorakh Soley) tr. by G. N. Gibson. [1959] [10]p. 10 refs. Library Communication no. 580; TL 1163; M269.
Order from LC or SLA mi$1.80, ph$1.80 59-19148

Trans. of Zhurnal Prikladnoy Khimii (USSR) 1949, v. 22, no. 6, p. 545-552.

The investigation of the hydrolysis and hydration of β-2CaO. $SiO_2$ in water and salt solutions permits of the following conclusions. In distilled water free from $CO_2$ hydrolysis of β-2CaO. $SiO_2$ does not take place; the fact that the molecular composition of the solution does not change in the course of three months is evidence of this. Hydration takes place extremely slowly, due to the negligible solubility of β-dicalcium silicate. In the presence of $CO_2$ the pH of the solution is lowered, which results in an increased rate of solution of calcium silicate and facilitates hydration. Sodium sulphate and calcium chloride increase the solubility of β. 2CaO. $SiO_2$ and the degree of hydration. $CaSO_4$ and sodium chloride have no significant effect on the solubility and hydration of calcium silicate. Magnesium salts promote the hydrolysis of calcium silicate in consequence of the formation of $Mg(OH)_2$ and the marked lowering of the pH of the solution. Precipitated magnesium hydroxide reacts with amorphous silica, forming a crystalline compound-hydrated magnesium silicate - the composition of which was not determined. It may be assumed that β-dicalcium silicate would not harden in water free from $CO_2$ and salts. $Na_2SO_4$ and $CaCl_2$ should accelerate hardening. The action of magnesium salts which takes place with formation of fine acicular crystals of hydrated magnesium silicate should have a positive rather than a negative effect on hardening. The crystallization of gypsum under the action of $MgSO_4$ solution should also promote an increase of mechanical strength of hardening calcium silicate.

Solov'yev, S. I. and Krylov, Ye. I.
NATURE OF HYDROCHLORIC ACID SOLUTION OF PENTAVALENT NIOBIUM [O Prirode Solyanokislykh Rastvorov Pyativalentnogo Niobiya] 29 Oct 59. 8p. 9 refs. JPRS: 1975-N.
Order from OTS $0.50 59-13979

Trans. of Zhurnal Neorganicheskoy Khimii (USSR) [1958] v. 3, no. 11, p. 2487-2490.

Vasenin, F. I.
HEAT OF POLYMORPHIC TRANSFORMATIONS OF CALCIUM ORTHOSILICATE (Teplota Polimorfnykh Prevreshchennykh Ortosilikata) tr. by G. N. Gibson. [1959] [5]p. 11 refs. Library Communication no. 558; T/L 867; M198.
Order from LC or SLA mi$1.80, ph$1.80 59-19092

Trans. from Akademiya Nauk SSSR. Doklady, 1948, v. 59, no. 7.

A diagrammatic representation is given of the quantitative relation of the heats of transformation of the γ-form to the β-form and the β-form to the α-form of calcium orthosilicate.

## Organic Chemistry

STABILIZED AND PLASTICIZED HIGH-POLYMERIC CHLORINATED HYDROCARBONS. [1959] 5p.
Order from LC or SLA mi$1.80, ph$1.80 60-10729

Trans. of German patent 883 647 (39b, 22/06) pat. 27 Feb 51, appl. announced 16 Oct 52, granted 3 June 53, issued 20 July 53 (Priority: U. S. pat. appl. 3 Mar 50) by Dow Corning Corporation, Midland, Mich. (U. S. A.).

Stabilized and plasticized high-polymeric chlorinated hydrocarbons containing chlorine linked to aliphatic groups, e.g., poly(vinyl chlorides), poly(vinylidene chlorides), and chloroprenes, are characterized in that they contain 0.5 to 15% of an organosilicon compound of this general formula:

$$R\left[-O-\overset{C_6H_5}{\underset{CH_3}{Si}}-\right]_n OR$$

where R represents a tertiary butyl or tertiary amyl radical, and n has an average value of 1 to 5.

Andryanov, K. A., Zhdanov, A. A., and Kazakova, A. A.
SYNTHESIS OF NEW POLYMERS WITH INORGANIC MOLECULAR CHAINS. [1959] 7p.
Order from ATS $9.00 ATS-12L36R

Trans. of *Akad[emiya] Nauk SSSR. Otdel[eniye] Khim[icheskikh] Nauk. Izvest[iya] 1959, no. 3, p. 466-471.

Balaceanu, J. G.
METHODS OF SYNTHESIS VIA HYDROCARBON OXIDATION: A SYSTEMATIC REVIEW OF THE REACTIONS. [1959] 12p.
Order from ATS $14.75 ATS-67L33F

Trans. of World Petroleum Congress (no. 4) Rome, 1955, Proc[eedings] preprint 4, sect. IV/B.

Bouquet, F.
THE AMINES OF HIGHER FATS. [1959] 10p. 23 refs.
Order from SLA mi$1.80, ph$1.80 60-10520

Trans. of Industries des Corps Gras (France) 1946, v. 2, p. 376-380.

A survey.

Braun, Julius v[on] and Manz, Gottfried.
THE REACTION OF ALDEHYDES WITH METALS AND THEIR CATALYTIC PRESSURE HYDROGENATION, tr. by P. M. M. 18 Jan 56, 6p. 8 refs.
Order from SLA mi$1.80, ph$1.80 60-10567

Partial trans. (p. 1696-1700) of Chem[ische] Berichte (Germany) 1934, v. 67B, p. 1696-1712.

Bresler, S. E., Kazbekov, E. N., and Saminskiy, E. M.
A STUDY OF MACRORADICALS IN POLYMERIZATION AND DEGRADATION PROCESSES, PT. 1. [1959] 7p.
Order from ATS $11.20 ATS-50L35R

Trans. of Vysokomolekulyarnyye Soyedineniya (USSR) 1959, v. 1, no. 1, p. 132-137.

Carlsen, Tage.
DECOMPOSITION OF CHLORAMINE IN AQUEOUS SOLUTION (C) (Sønderdeling af Kloramin i vandig Opløsning (C)) tr. by Pierre Pallamary. 24 July 59, 8p.
Order from LC or SLA mi$1.80, ph$1.80 59-18483

Partial trans. of Dansk Tidsskr[ift for] Farm[aci] (Denmark) 1956, v. 30, p. 52-55.

Darmstädter, L. and Lifschütz, J.
ON THE KNOWLEDGE OF THE COMPOSITION OF WOOL FAT. [1959] 4p. 2 refs.
Order from SLA mi$1.80, ph$1.80 60-10546

Trans. of Chem[ische] Ber[ichte] (Germany) 1896, v. 29, p. 1474-1477.

Dolgoplosk, B. A., Romanov, L. M. and others.
USE OF CATALYSTS BASED ON MAGNESIUM HALOGEN ALKYL AND TITANIUM TETRACHLORIDE IN THE PRODUCTION OF AMORPHOUS AND CRYSTALLINE POLYMERS FROM α-OLEFINES AND DIENES (Katalizatory na Osnove Magniygalogenalkilov i Chetyrekh-khloristogo Titana dlya Sinteza Amorfnykh i Kristallicheskikh Polimerov iz α-Olefinov i Dienov). Apr 58 [5]p. 13 refs. C. T. S. no. 448.
Order from LC or SLA mi$1.80, ph$1.80 59-22235

Trans. of Akademiya Nauk SSSR. Doklady, 1957, v. 115, no. 4, p. 731-733.

The reaction of organo-magneisum compounds of the type R-MgHal with $TiCl_4$ led to the formation of catalytic groups which very effectively initiate polymerization of monomers provided that derivatives of magnesium have been fully released from the ester, as it has been shown in case of ethyl-magnesium-chloride, ethyl-magnesium-bromide and octyl-magnesium-bromide. For experimental purposes it is convenient to use organo-magnesium compounds in the form of dispersions in paraffin. To obtain the latter, the process of disintegration of the ester group is carried out in the paraffin medium, which results in thin dispersion; this remains quite stable in humid conditions and does not lose its activity over a long period when stored in open air. The system R-MgHal-$TiCl_4$ is effective for initiating process of polymerization using ethylene, propylene, styrol and isoprene. Polymerization of ethylene is accomplished without application of pressure or external heating. The reaction starts almost immediately when ethylene is passing through the suspension of organo-magnesium compound in benzine containing a small quantity of titanium tetrachloride. Polyethylene obtained by such a method has $(\eta) = 2.55$ (measured in decalins at 135°), melting temperature 130 to 138°, tensile strength 335 kg/sq cm and relative elongation 730 percent. During polymerization of propylene in the presence of ethyl magnesium chloride and titanium tetrachloride there is a formation of about equal quantities of amorphous and crystalline (isotactic) forms of polymer. The amorphous form which is soluble in ester has a vitrification temperature of -35° and $(\eta)$ 0.57 (in benzene). Equally a fraction is formed which is insoluble in boiling hexane, crystallinity of which has been proved by spectroscopic and rontgeno-structural analysis. Various forms of polymers were separated during polymerization of isoprene. The latter, using the same components resulted in (1) a fraction, soluble in benzene containing 87 per cent cis-1, 4 links, and (2) an insoluble form, containing, according to "I-k" spectrum only trans-1, 4 links. Simultaneous derivation of cis-1, 4 polyisoprene and trans-1, 4 polyisoprene, or amorphous and isotactic polypropylene is a direct proof that the system contains catalytic groups of different types, which lead to the formation of a structure of polymer, specific for given group.

Gantter, E. and Hell, Carl.
THE SEPARATION OF SUBERIC ACID AND AZELAIC ACID. [1959] 21p.
Order from SLA mi$2.70, ph$4.80 60-10561

Trans. in manuscript of Chem[ische] Ber[ichte] (Germany) 1881, v. 14, p. 1545-1552.

Heyns, Kurt, Eichstedt, Rolf, and Meinecke, Karl-Heinz.
THE CONVERSION OF FRUCTOSE AND SORBOSE WITH AMMONIA AND AMINES. [1959] 13p. 16 refs.
Order from SLA mi$2.40, ph$3.30 60-10186

Trans. of Chemische Berichte (West Germany) 1955, v. 88, no. 10, p. 1551-1555.

Kaufmann, H. P., Kirschneck, H., and Hoffmann, E. G.
FATTY ALDEHYDES. I. PREPARATION OF PURE COMPOUNDS AND POLYMERIZATION. 1 Sep 55, [12]p. 15 refs.
Order from SLA mi$2.40, ph$3.30 60-10392

Trans. of [Fette Seifen Anstrichmittel] (West Germany) 1953, v. 55 [no. 12] p. 847-851.

Kaufmann, H. P.
STUDIES IN FATS. LXXVIII. TESTING OF THE PURITY OF FAT ACIDS AND INVESTIGATION OF ADSORPTION SEPARATIONS IN THE FIELD OF FATS. [1959] 7p. 1 ref.
Order from SLA mi$1.80, ph$1.80 60-10549

Trans. of Angew[andte] Chem[ie] (Germany) 1940, v. 53, [no. 7/8] p. 98-99.

Kolesnikov, G. S., Klimentova, N. V., and Yermolayeva, T. I.
CARBON CHAIN POLYMERS AND COPOLYMERS. VIII. SOLUTION POLYMERIZATION OF STYRENE AND METHYL METHACRYLATE IN THE PRESENCE OF TRIBUTYLBORON. [1959] 5p.
Order from ATS $7.75 ATS-85L35R

Trans. of *Akad[emiya] Nauk SSSR. Otdel[eniye] Khim[icheskikh] Nauk. Izvest[iya] 1959, no. 4, p. 727-730.

Kurashev, M. V., Topchiyev, A. V., and Paushkin, Ya. M.
ALKYLATION OF BENZENE WITH AMYLENES BY MEANS OF A CATALYST BASED ON BORON TRIFLUORIDE. [1959] 5p.
Order from ATS $7.50 ATS-60L35R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1956, v. 107, no. 6, p. 839-842.

Kutsenok, B. E., Kulakova, M. N., and others.
THE INITIATION OF THE POLYMERIZATION PROCESS IN EMULSIONS UNDER THE INFLUENCE OF ISOPROPYLBENZENE HYDROPEROXIDE AND $SO_2$. [1959] 5p.
Order from ATS $5.50 ATS-66L34R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1959, v. 125, no. 5, p. 1073-1076.

Lebedev, N. N.
MECHANISM OF THE CATALYTIC ACTION OF ALUMINUM CHLORIDE. IV. KINETICS AND REACTION MECHANISM OF THE ALKYLATION OF BENZENE BY OLEFINS. [1959] 6p.
Order from ATS $9.00 ATS-07L36R

Trans. of *Zhur[nal] Obshchey Khim[ii] (USSR) 1954, v. 24, p. 1782-1787.

Lindner, Kurt.
FAT CHEMICAL PROCESSES AND THEIR ECONOMICAL STATUS. VI. THE MANUFACTURE OF GLYCERIDES AND OTHER ESTERS FROM FATTY ACIDS. [1959] 7p. 38 refs.
Order from SLA mi$1.80, ph$1.80 60-10414

Trans. of [Fette Seifen Anstrichmittel] (Germany) 1943, v. 50 [no. 8] p. 396-398.

Martinez Moreno, J. M., Vazquez Roncero, A., and Janer Del Valle, M. L.
APPLICATION OF THE CRYSTALLINE COMPOUNDS OF UREA TO THE CHEMISTRY OF FATS. III. FRACTIONATION OF FATTY ACIDS AND THEIR ESTERS THROUGH A COLUMN OF UREA, tr. by P. M. M. 23 Nov 55, 11p. 5 refs.
Order from SLA mi$2.40, ph$3.30 60-10525

Trans. of Sociedad Espanola de Fisica y Quimica. Anales, 1953, 49B, p. 539-546.

Tests are described which show the possibilities of urea chromatography.

Matthes, Hermann.
CONTRIBUTION TO THE KNOWLEDGE OF ALCOHOL BASES. COMMUNICATION NO. 1 [1959] 5p. 14 refs.
Order from SLA mi$1.80, ph$1.80 60-10559

Partial trans. (p. 105-107) of Justus Liebigs Annalen der Chemie (Germany) 1901, v. 315, no. 1 [p. 104-137].

Meyer, H[ans] and Mally, J[oseph].
HYDRAZINE DERIVATIVES OF PYRIDINECARBOXILIC ACIDS. III. DERIVATIVES OF ISONICOTINIC ACID, tr. by P. M. M. 4 Sep 52, 4p.
Order from SLA mi$1.80, ph$1.80 60-10081

Partial trans. (p. 401-402) of Monatshefte [für Chemie und Verwandte Teile Anderer Wissenschaften] (Austria) 1912, v. 33, p. 393-414.

Natta, G. [Mazzanti, G.] and others.
THE INFLUENCE OF HYDROGEN ON THE ANIONIC COORDINATION POLYMERIZATION OF PROPYLENE AND OF ETHYLENE. [1959] [20]p. 16 refs.
Order from SLA mi$2.40, ph$3.30 60-10598

Trans. of [Ia] Chimica e l'Industria (Italy) 1959, v. 41, no. 6, p. 519-526.

The influence of hydrogen on the molecular weight and on the rate of polymerization of ethylene and propylene with catalysts prepared from $AlEt_3$ and $\alpha$-$TiCl_3$ is described. Under favorable experimental conditions, the molecular weight can be regulated within rather wide limits, without giving rise to unwanted secondary effects, such as the hydrogenation of the monomer, or a significant reduction in stereospecificity. The reduction in molecular weight, under the conditions of our experiments, does not depend on the ratio of the partial pressures of monomer to hydrogen, but only on the square root of the partial pressure of the latter. The nature of the terminal groups and the overall rate of polymerization are in agreement with a kinetic interpretation according to which the hydrogen may give rise to hydrogenolysis of the bond existing between catalyst and the growing polymer chains. The metal-hydride bonds thus formed can promote the polymerization of the monomer only after the addition of a molecule of the latter and the formation of a metal alkyl bond. The lower rate of this addition compared to the subsequent process of propagation accounts for the decrease in the rate of polymerization observed when working in the presence of hydrogen. (Author)

Natta, Giulio, Corradini, Paolo and Bassi, Ivano Walter.
RADIOGRAPHIC IDENTIFICATION OF SOME ISOTACTIC POLYMERS. [1959] 15p. 16 refs.
Order from SLA mi$2.40, ph$3.30 60-10701

Trans. of Gazzetta Chimica Italiana, 1959, v. 89, no. 3, p. 784-797.

Results are reported of the radiographic identification of some new isotactic polymers prepared for the first time by the Laboratory of Industrial Chemistry of the Polytechnicum of Milan. They comprise some new fluorinated polymers capable of producing fibers, like parafluorostyrol, orthofluorostyrol, orthomethylparafluorostyrol, the polymer of alpha vinylnaphthalene, and the polymer of allytrimethylsilane. The helical form of their chains with tertiary or quaternary symmetry, depending on the hindrance and the manner of packing of the substituents in the crystal lattice, confirms their isotacticity and the stereoselectivity of the process of synthesis. (Presented at the 8th National Congress of Chemistry held jointly with the Society of Chemical Industry of London; Torino, 27 May to 2 June, 1958)

Obolentsev, R. D., Usov, Yu. N. and Voyskovskaya, M. G.
CONVERSIONS OF ESTERS OVER ALUMINOSILICATES. [1959] [6]p. 8 refs. TL 887; M213.
Order from LC or SLA mi$1.80, ph$1.80 59-19106

Trans. of [Akademiya Nauk SSSR]. Doklady, 1951, v. 80, no. 6, p. 884-892.

Paal, C. and Braikoff, M. P.
SOME NEW PYRROLE DERIVATIVES. [1959] 17p. 13 refs.
Order from SLA mi$2.40, ph$3.30 60-10563

Trans. of Chem[ische] Ber[ichte] (Germany) 1889, v. 22, p. 3086-3096.

Pokrovskiy, Ye. I. and Vol'kenshteyn, M. V.
INFRARED STUDIES ON ISOTACTIC POLYPROPYLENE (Issledovaniye Izotakticheskogo Polipropilena Metodom Infrakrasnykh Spektrov). Apr 58 [3]p. 5 refs. C.T.S. no. 447.
Order from LC or SLA mi$1.80, ph$1.80 59-22234

Trans. of Akademiya Nauk SSSR. Doklady, 1957, v. 115, no. 3, p. 552-553.

Specimens of isotactic polypropylene prepared in various ways were studied as films 0.2 mm thick. The films were prepared by melting the polymer and pressing the melt between two rock-salt plates. The infrared absorption spectra were recorded on an IKS-11 spectrometer with NaCl and LiF prisms over the range 700 to 3000 $cm^{-1}$. Spot readings and continuous records (using an EPP-09 pen recorder) were taken. An electrical heater was used to take measurements at temperatures in the range 20° to 200° C. The following absorption bands were found in all specimens: 720, 730, 790, 810, 839, 894, 935, 969, 992, $\wr$1050, 1108, 1170, 1376, 1460, $\sim$2850, 2875, 2924 and 2957 $cm^{-1}$. At 830 to 1000 $cm^{-1}$ the spectra agree with those of Natta et al. (Chim. e ind. Milan 38: 124-127, 1956, an English transl. of which is available from Research Information Service, N. Y. as ISR rept. 96959), except for a very weak band at 935 $cm^{-1}$, not seen in all specimens. The strong bands at 894 and 992 $cm^{-1}$ are typical of the crystalline isotactic polymer, these being very weak in a fraction extracted by ether. The crystallinity was studied by a method already described. (Akad. Nauk SSSR. Doklady 95: 109, 1954 and Izvest. Ser. Fiz. 18: 735, 1954; Zhur. Tekh. Fiz. 26: 1456, 1956). Changes in the spectra occured on heating to 140° to 150°C, the bands at 810, 839, 894 and 992 $cm^{-1}$ weakening and practically vanishing at $\wr$170°C, at which temperature the polymer is completely melted. The bands are assigned to the crystalline state and are typical of the most stable flexible isomer which occurs in the crystal. The degree of crystallinity was determined by studying the temperature variation of the 790 $cm^{-1}$ band intensity. This band becomes much stronger when the polymer melts; it is also present in the spectrum from the ether extract. This fraction gives a spectrum practically the same as the fused polymer, except for some minor differences around 800 to 850 $cm^{-1}$. The 790 $cm^{-1}$ band is assigned to the amorphous polymer. The amorphous content was determined by comparing the optical density at the 790 $cm^{-1}$ maximum at room temperature and at a temperature above the melting point, the degree of crystallinity being found from the difference. Values of $\sim$75, $\sim$90 and $\sim$100 per cent were found for the three specimens, which were very highly crystalline.

Rapoport, I. B., Nefedov, B. K., and Grakhova, S. G.
DEHYDROGENATION OF HIGHER PARAFFIN HYDROCARBONS OVER CARBON CATALYSTS. [1959] 11p.
Order from ATS $9.00 ATS-18L36R

Trans. of *Zhur[nal] Priklad[noy] Khim[ii] (USSR) 1959, v. 32, no. 5, p. 1112-1121.
Also included in trans. 59-17208 available from LC or SLA mi$2.40, ph$3.30 [1959] [19]p.

Reppe, Walter and others.
VINYLATION. [1959] 50p. 113 refs.
Order from SLA mi$3.30, ph$7.80 60-10713

Trans. of Justus Liebigs Annalen der Chemie (West Germany) 1956, v. 601, no. 1/3, p. 81-138.

The present paper concludes the publication of our results in the field of pressure reactions of acetylene obtained up to the year 1945. (Author)

Seubert, W., Greull, G., and Lynen, F.
THE SYNTHESIS OF FATTY ACIDS WITH PURIFIED ENZYMES FROM THE FATTY ACID CYCLE (die Synthese der Fettsäuren mit Gereinigten Enzymen des Fettsäurecyclus) tr. by P. Hajdu. 13 Oct 59, 11p. (3 figs. omitted) 11 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-19886

Trans. of Angewandte Chemie (West Germany) 1957, v. 69, no. 11, p. 359-361.

Higher fatty acids from labelled acetyl-CoA could be produced from an artificially combined enzyme system, to which there belongs, in addition to thiolase, β -hydroxy-acyl-dehydrogenase and crotonase, a new reducing enzyme which can be isolated from animal liver or yeast. When using the reducing enzyme from pig liver the maximum radioactivity was not found in the long chained fatty acids, as had been anticipated, but in capric acid, since the caprinyl-CoA formed in the fatty acid was largely split by hydrolysis by an acyl-CoA-deacylase contained in the enzyme preparation from yeast, which did not contain this deacylase, radioactivity increased with the lengthening of the chain. (Author)

Shur, A. M. and Filimonov, B. F.
DIRECT VINYLATION OF ADIPIC ACID. [1959] [8]p. 2 refs.
Order from LC or SLA mi$1.80, ph$1.80 69-10708

Trans. of *Zhur[nal] Priklad[noy] Khim[ii] (USSR) 1959, v. 32 [no. 8] p. 1880-1883.

Results are reported of experiments on the liquid-phase vinylation of adipic acid in a monochloroacetic acid medium in the presence of mercury catalysts and traces of oxidants. Yields of divinyl adipate of over 80% were obtained, based on reacted adipic acid, or 74% of theory, calculated on the basis of original acid. The effects of various catalytic additives on the absorption of acetylene by the fused mixture of acids were also studied.

Sianesi, D. [Serra, R., and Danusso, F.].
STEREOSPECIFIC POLYMERIZATION OF AROMATIC VINYL MONOMERS. II. HALOGEN-SUBSTITUTED STYRENES. [1959] [12]p. 12 refs.
Order from SLA mi$2.40, ph$3.30 60-10599

Trans. of [la] Chimica e l'Industria (Italy) 1959, v. 41, no. 6, p. 515-518.

Anionic coordination polymerization of various styrenes with halogen substitution in the nucleus leads to the formation of polymers with an ordered structure. o-Fluorostyrene and p-fluorostyrene and a mixture of these isomers give isotactic polymers characterized by high or medium crystallinity, high rate of crystallization and high melting points. Polymers from 2-methyl-4-fluorostyrene also crystallize readily. On the other hand, meta- and para- substituted chloro- and bromostyrenes polymerize to products which, although isotactic, apparently do not crystallize. (See also 59-17206 or 60-10597)

Smirnov, E. A.
COLOUR-PHENOMENA IN DIACYL DERIVATIVES OF n-AMINOPHENOL (O Yavleniyakh Tsvetnosti u Diatsil'nykh Proizvodnykh n-Aminofenola). July 59 [9]p. 8 refs. RTS no. 1055.
Order from LC or SLA mi$1.80, ph$1.80 59-18406

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 120, no. 3, p. 544-547.

Seven out of eight diacyl derivatives of n-aminophenol containing the electron-donor system acyl-trimethylgallate were found to have both pale and deeply colored yellow forms, either of which may be converted into the other by crystallization from various solvents. Two differently colored forms could not be obtained from compounds not containing the acyl-trimethylgallate donor system. This system is considered a stronger electron-donor system than the molecule of n-aminophenol (diacylated) because the latter's donor properties, both of the amino and the hydroxy group, are markedly suppressed by the CO groups attached to them. System acyl-trimethylgallate is not conjugated with the electron-acceptor system acyl-4-nitrobenzoate or acyl-3, 5-dinitrobenzoate. In nearly all cases the pale forms of compounds containing acylbenzoate were more deeply colored than the corresponding compounds containing acyl-trimethylgallate.

Tolstopyatova, A. A. and Balandin, A. A.
CATALYTIC PROPERTIES OF CERIUM DIOXIDE IN THE DEHYDROGENATION AND DEHYDRATION OF ALCOHOLS AND IN THE DEHYDROGENATION OF CYCLOHEXANE [Kataliticheskiye Svoystva Dvuokisi Tseriya v Otnoshenii Reaktsiy Degidrogenizatsii i Degidratatsii Spirtov i Degidrogenizatsii Tsiklogeksana]. [1959] 14p. 25 refs.
Order from LC or SLA mi$2.40, ph$3.30 60-10583

Trans. of Zhurn[al] Fiz[icheskoy] Khimii (USSR) 1958, v. 32 [no. 8] p. 1831-[1841].
Another translation is available from ATS $17.50 as ATS-45L33R [1959] 13p.

The activation energies were determined for the dehydrogenation of methyl, ethyl, n-propyl, iso-propyl, alcohols and the dehydrogenation of cyclohexane, as well as of the dehydration of iso-propyl alcohol, over cerium dioxide prepared by precipitating cerium hydroxide from the nitrate. The bond energies of carbon hydrogen and oxygen with the catalyst were calculated, and the adsorption potentials of these reactions on $CeO_2$ were found. The effect on these values of the alcohol structure was investigated. (Author)

Topchiyev, A. V., Kurashev, M. V., and Paushkin, Ya. M.
ALKYLATION OF BENZENE WITH BUTYLENES BY MEANS OF A CATALYST BASED ON BORON TRIFLUORIDE. [1959] 6p.
Order from ATS $9.50 ATS-59L35R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1956, v. 107, no. 5, p. 702-705.

Ullmann, F. and Reitstotter, J.
AMORPHOUS CARBON (3). [1959] 9p.
Order from ATS $14.50 ATS-90L34G

Trans. of Enzyklopadie der Technischen Chemie, 1930, v. 6, p. 617-624.

Wiedeking, K.
PRODUCTION OF AMINES FROM HYDROCARBONS, ALCOHOLS, AND PHENOLS. [1959] 7p. 27 refs.
Order from SLA mi$1.80, ph$1.80 60-10540

Partial trans. (p. 205, 206-210, 214) of Ges[ammelte] Abhandl[ungen zur] Kenntnis [der] Kohle (Germany) 1937 [v. 21] p. 204-216.

Zhigach, K. F., Finkel'shteyn, M. E. and others.
PREPARATION AND STUDY OF THE PHYSICAL-CHEMICAL PROPERTIES OF FRACTIONS OF CARBOXY METHYL CELLULOSE. [1959] 5p. 7 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-10590

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 123, no. 2, p. 289-291.

The study of the carboxy methyl cellulose (KMTS) fractions obtained by the method of precipitation showed that they are heterodynamic and capable of their own stabilization. The gelatinous phase separated from KMTS is characterized by low stabilizing power. The data indicate that besides the degree of polymerization and etherification determining the effectiveness of the stabilizing power of the KMTS preparations, one should also be concerned with the percentage of these gelatinous phases. The ratio of gel and sol phase in a product has significance not only in the use of KMTS as a stabilizer of clay solutions but also in the use of KMTS as an adhesive agent.

Ziegler, K., Späth, A. and others.
THE HALOGENATION OF UNSATURATED SUBSTANCES IN THE ALLYL POSITION. [1959] 2p.
Order from SLA mi$1.80, ph$1.80 60-10557

Partial trans. (p. 109-110) of [Justus] Liebig's Ann[alen der] Chem[ie] (Germany) 1942, v. 551 [no. 1-3] p. 80-119.

Ziegler, K., Krupp, F., and Zosel, K.
A SIMPLE SYNTHESIS OF PRIMARY ALCOHOLS FROM OLEFINS, tr. by P. M. M. Pt. 6 of Aluminum in Organic Chemistry. 10 Nov 58, 4p. 6 refs.
Order from SLA mi$1.80, ph$1.80 60-10538

Trans. of Angewandte Chemie (West Germany) 1955, v. 67 [no. 16] p. 425-426.

The aluminum alkyls obtained according to Part 1 are easily converted with air (sometimes post-treatment with oxygen is practical) into alcoholates:

$$AlR_3 + 1\ 1/2\ O_2 = Al(OR)_3$$

Decomposition with water yields alcohols in addition to pure alumina, and namely, exclusively (99% and more) primary alcohols, as the addition of Al-H to olefins, which is the basic principle in the production of aluminum alkyls, always takes place as follows:

$R\text{-}CH{=}CH_2 — R{=}CH_2\text{-}CH_2\text{-}CH_2al$ and

$$R_2C{=}CH_2 \rightarrow R_2CH\text{-}CH_2al$$

Accordingly, olefins with a double bond in the middle position cannot be "hydrated" directly after this method as they do not react with aluminum and hydrogen. The reaction is possible in certain cases after preliminary re-arrangement and displacement of the double bond. (Extracted from the report)

## Physical Chemistry

ZHURNAL FIZICHESKOY KHIMII (USSR) 1959, V. 33 (Journal of Physical Chemistry).
Order from OTS $1.10, $6.00/6 mo.
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No. 7, p. 1449-1676, PB 141 072T-21
No. 8, p. 1681-1900, PB 141 072T-20

Consists of abstracts in English

Andryanova, T. I. and Roginskiy, S. Z.
STUDY OF THE MECHANISM OF CONVERSION OF ALKANES OVER A SILICA-ALUMINA CATALYST USING MOLECULES TAGGED WITH $C^{14}$. [1959] 15p.
Order from ATS $20.75 ATS-60L32R

Trans. of Problemy Kinetiki i Kataliza (USSR) 1957, v. 9, p. 152-161 and 168-172.

Belikova, T. P.
DELAYED LUMINESCENCE OF DIBENZYL AND DIPHENYLAMINE CRYSTALS ON PHOTO- AND β-EXCITATION, tr. by Lydia Venters. July 59, 4p. 5 refs.
Order from LC or SLA mi$1.80, ph$1.80 AEC-tr-3779

Trans. of *Optika i Spektroskopiya (USSR) 1959, v. 6, no. 1, p. 117-118.

Crystalline substances with a strong and sufficiently delayed afterglow at room temperature were chosen as investigation objects; dibenzyl and diphenylamine proved to be such. The spectra of the summated fluorescence and phosphorescence during the photoexcitation were taken on an ISP-51 spectrograph with a standard chamber. The decay law for both samples was exponential in the range of intensity change investigated (approximately by 50 times relative to the initial). Mean lifetime, calculated from the curves obtained, was 0.85 ± 0.02 sec for dibenzyl and 0.35 ± 0.02 sec for diphenylamine. Results indicate that at β-excitation as well as at photoexcitation the transition to a metastable level occurs from the excited singlet level, and a marked direct excitation of the metastable level was not observed.

Besson, Jean and Müller, Werner.
THE ACTION OF WATER VAPOR ON LITHIUM, tr. by Myra Scott. [1959] 3p. 3 refs.
Order from LC or SLA mi$1.80, ph$1.80 AEC-tr-3711

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1958, v. 247, p. 1869-1872.

The primary product of the reaction is LiOH, with a secondary formation of the monohydrate $LiOH \cdot H_2O$. Starting from 200° it reacts with excess lithium yielding the oxide $Li_2O$, which is practically the only solid product up to 450°. The hydride LiH also forms in small quantity at approximately 400°.

Blüh, Otto.
PHENOMENA OCCURRING IN THE ALTERNATING FIELD DURING INVESTIGATION OF COLLOIDS, tr. by E. T. Gebert. [1959] 7p. 7 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-18269

Trans. of [Kolloid-Zeitschrift] (Germany) 1925, v. 37, p. 267-271.

In a simple chamber the examination of a silverhydrosol (Bredig) has been conducted. The by Cotton and Mouton observed phenomenon of the oscillatory movement of colloid particles in the alternating field may be supplemented to that effect that through electro-osmotic movement of the water an oscillation of the water occurs, which forces ellipse- and looplike courses on the particles of the solution. If this phenomenon accepted as criterion for the occurrence of "electro-osmotic oscillations" of a fluid in the alternating field, it proves that this phenomenon does not occur in a chamber especially constructed for certain purposes. A description was given of the quartz glass chamber, which was very suitably altered for electric examination of colloids, also described was the appropriate chamber support. With this chamber observations of an old vanadium-pentoxide sol were made. One notes the peculiar phenomenon that at the application of an alternate voltage also such particles participate in the oscillation, which adhere to the walls of the chamber. Measurements of the length of these particles are made whereby through application of steadily increasing voltages finally a point is attained where the adhering particle does not experience any further amplitude increase through voltage rise. The length of the amplitude, as measured with an ocular screen, is the length of the particle. Values are found within the magnitude of 0.001 mm. (Author-translator)

Budnikov, P. P. and Bobrovnik, D. P.
THE FORMATION OF COLLOIDAL GYPSUM AND THE CONDITIONS OF CRYSTALLISATION, tr. by G. N. Gibson. Nov 52 [15]p. 16 refs. Library Communication no. 477; TL 1153; M268.
Order from LC or SLA mi$2.40, ph$3.30 59-19147

Trans. of Kolloidnyy Zhurnal (USSR) 1938, v. 4, no. 6/8, p. 483-495.

The purpose of the present investigation was to find retarders by the use of which it would be possible to obtain an increase in strength of a gypseous cement. (Extracted from the report)

Bues, W. von and Gehrke, H. W.
VIBRATION SPECTRA OF MOLTEN, GLASSY, AND CRYSTALLINE, HIGHLY POLYMERIZED PHOSPHATES (Schwingungespektren Geschmolzener, Glasiger und Kristallieierter Hochpolymerer Phosphate) tr. by G. M. Wolten. [1959] [36]p. 14 refs.
Order from LC or SLA mi$3.00, ph$6.30 AEC-tr-3595

Trans. of Zeitschrift fur Anorganische Chemie (East Germany) 1956, v. 288, p. 307-323.

Raman spectra of melts of $NaPO_3$ and $KPO_3$ are described and assigned. These spectra are compared with the infra-red spectra, in the rock salt region, of Kurrol's potassium salt and Kurrol's sodium salt B as well as the spectrum of sodium trimetaphosphate. Two different chain arrangements with a periodicity of two are discussed for Kurrol's sodium and potassium salts. The melts of the phosphates still exhibit a certain ordering of the chains. The $P_3O_9$ ion in the crystal has the symmetry $C_{3v}$.

Ciamician, G. L. and Dennstedt, M.
ACTIONS OF NASCENT HYDROGEN ON PYRROLE. [1959] 8p. 1 ref.
Order from SLA mi$1.80, ph$1.80 60-10544

Partial trans. (p. 1536-1539) in manuscript of Chem[ische] Ber[ichte] (Germany) 1883, v. 16, p. 1536-1544.

Clausing, P.
ON THE ADSORPTION TIME AND ITS MEASUREMENT BY FLOW EXPERIMENTS, tr. by Doletha Evans. [1959] 68p. (19 figs. 2 tables [paragraphs 8 and 9] omitted) 52 refs.
Order from LC or SLA mi$3.90, ph$10.80 AEC-tr-36

Trans. of Annalen der Physik (Germany) 1930, 5 ser, v. 7, p. 489-[568].

Demassieux, N. and Heyrovsky, J.
CONTRIBUTION TO THE STUDY OF TRIVALENT CHROMIUM. [1959] [5]p. 11 refs.
Order from LC or SLA mi$1.80, ph$1.80 AEC-tr-3659

Trans. of Journal de Chimie Physique (France) 1929, v. 26, p. 219-223.

Polarization curves obtained during electrolysis with the dropping mercury cathode were used for measuring the activity of free ions and calculating the ionic equilibrium constants. The chloride and sulfate solutions of trivalent chromium and of potassium and rubidium alums were studied in various dilutions. Polarograms are included.

Desreux, V.
THE SYSTEMATIC FRACTIONAL EXTRACTION OF POLYMERS (L'Extraction Fractionnée Systematique des Polymers) [1958] [18]p. (11 figs. omitted) 2 refs.
Order from SLA mi$2.40, ph$3.30 59-17133

Trans. of Recueil [des Travaux Chimiques des Pays-Bas] (Netherlands) 1949, v. 68, p. 789-806.

A fully automatic apparatus is described for the systematic extraction of polymers. Typical curves obtained with polythene, cellulose nitrate and cellulose acetate are given.

Falkai, B. v. and Stuart, H. A.
CRYSTALLIZATION OF ISOSTATIC POLYPROPYLENE. [1959] 5p. 8 refs.
Order from SLA mi$1.80, ph$1.80 59-20862

Trans. of Kolloid-Zeitschrift (West Germany) 1959, v. 162, no. 2, p. 138-140.

Isostatic polypropylene was prepared according to a method presented by Natta et al. (Makromol. Chem. 24: 258, 1957), and the atactic portions were extracted completely with n-heptane. The limiting viscosity measured in tetraline at 135°C was 1.28. The crystallized material had a melting point of 173°C. Because cooling the melts between 145° and 122°C gave spherulites of 2000μ diameter, it was possible to measure on a single spherulite the increase in radius with time, and from this to calculate the radial growth velocity. Good agreement was found between the speed of crystal growth detected microscopically and calculated according to M. Avrami (J. Chem. Phys. 7: 1103, 1939; 8: 212, 1940; and 9: 177, 1941). In a poor solvent (decanol) the crystallization mechanism changed and the rate of the total crystallization decreased markedly, with a slower time factor in Avrami's equation. Microscopic determinations showed that the spherulites crystallizing from hot decanol (180°C) were not spherical but disk-like formations with a preferential growth direction.

Hofmann, A. W.
ON THE EFFECT OF BROMINE IN ALKALINE SOLUTION ON AMINES. [1959] 4p. 4 refs.
Order from SLA mi$1.80, ph$1.80 60-10543

Trans. of Chemische Berichte (Germany) 1883, v. 16, p. 558-560.

Honda, Hidemasa.
MAGNETOCHEMISTRY OF PETROLEUM. III. MAGNETIC PROPERTIES OF JAPANESE CRUDE OILS. [1959] [30]p. 7 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-16358

Trans. of Nenryo Kyokai-Shi (Japan) 1956, v. 35, March, p. 141-156.

The magnetic susceptibilities of Japanese crude oils were measured, and the relationships of magnetic susceptibility versus specific gravity, viscosity, residual carbon, solidifying point, flash point, and distillation test were sought. The oils were grouped into the 4 types, based on the relationship between the volume magnetic susceptibility, $K$, and the magnetic correlation index. Then, based on specific gravity, viscosity, residual carbon, solidifying point, flash point, and distillation test relationships, each of the types were further divided into the 2 sub-types of A and B; Types III and IV were further divided into sub-sub-types of a and b, and their characteristics, states of distribution, and so forth, were clarified in terms of oil layer, oil field, region, and earth stratum. (See also 59-15690)

Isirikyan, A. A. and Kiselev, A. V.
HEAT OF ADSORPTION OF N-HEXANE AND N-HEPTANE VAPORS ON SILICA GELS. [1959] 12p. 12 refs.
Order from LC or SLA mi$2.40, ph$3.30 60-10584

Trans. of Zhurnal Fiz[icheskoy] Khimii (USSR) 1957, v. 31 [no. 9] p. 2127-2137.

The differential heats of adsorption of n-hexane and n-heptane vapours on wide-porous and finely porous silica gels were measured by means of a calorimeter with constant heat exchange and a vacuum liquid microburette. For normal alkanes the standard heat of adsorption on a wide-porous silica gel was determined as a function of the number of carbon atoms in their molecules. The adsorption heats of the investigated hydrocarbons increase sharply if silica gels with narrower pores are used. Both with wide-porous and finely porous silica gels the end part of sorption is marked by a sharp maximum in the heat of sorption. These maxima can be explained from the standpoint of the theory of capillary condensation; they are connected with sharp changes in the capillary pressure of the adsorbed liquid, which take place when the sorption process is coming to the end.

Ivanov, K. I. and Vilyanskaya, E. D.
ON THE REACTION OF HYDROCARBON AUTOXIDATION INHIBITORS WITH ALKYL AND PEROXIDE RADICALS. [1959] 7p. 10 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-10721

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 121, no. 1, p. 107-110.

Kavtaradze, N. N.
HEATS OF ATOMIC AND MOLECULAR CHEMISORPTION OF HYDROGEN ON NICKEL, IRON, CHROMIUM, AND PLATINUM. [1959] 4p.
Order from ATS $6.20 ATS-29L35R

Trans. of Zhur[nal] Fiz[icheskoy] Khim[ii] (USSR) 1958, v. 32, no. 5, p. 1055-1058.

Kilin, S. F. and Rozman, I. M.
INFLUENCE OF REABSORPTION ON THE FLUORESCENCE DURATION OF ORGANIC SUBSTANCES, tr. by Lydia Venters. July 59, 15p. 13 refs.
Order from LC or SLA mi$2.40, ph$3.30 AEC-tr-3777

Trans. of *Optika i Spektroskopiya (USSR) 1959, v. 6, no. 1, p. 70-77.

Investigations of the radiation kinetics of luminescence of plastic scintillators were made with polystyrene as the basic material. The excitation was produced by ionizing radiation. It was demonstrated by means of multifrequency phase fluorometer, that the fluorescence of tetraphenylbutadiene and triphenylpyrazoline in polystyrene in the presence of appreciable reabsorption is quenching according to an exponential law. The results of measurements of the mean duration of fluorescence, external luminescence spectra and quantum yield are in agreement with the computation.

Klevens, H. B. and Raison, M.
ASSOCIATIONS IN THE PERFLUORO ACIDS. Pt. III. STUDY OF SURFACE TENSION (Association dans les Perfluoroacides. III. Etudes des Tensions Superficielles) tr. by A. Pingell. 1959 [20]p. 18 refs. NRL Trans. no. 725.
Order from OTS $0.50 59-21054

Trans. of Journal de Chimie Physique (France) 1954, v. 51, p. 1-8.

A study is made of the modification of the properties of association in the perfluoro acids as a function of the medium used as solvent: water, water and various additives. A comparison is made of the behavior of perfluoro acids with that of the salts of the paraffin chain: whereas a zero effect is obtained for the aqueous solutions of perfluoro acids when varying the ion energy of the solution with addition of electrolytes, a very marked effect is obtained for the aqueous solutions of the paraffin chain salts. One finds the same contrast between these two types of the surface-active compound, if one varies the pH of the solvent: the CMC of the perfluoro acids increases when the pH increases, and decreases when pH decreases; on the other hand, the CMC of aqueous solutions of paraffin chain salts is not perceptibly affected by the modification of pH. The technique used is the measurement of surface tension as a function of the concentration. (Author)

Krotova, N. A., Kirillova, Yu. M., and Deryagin, B. V.
INVESTIGATION OF THE INFLUENCE OF CHEMICAL STRUCTURE ON ADHESION (Issledovaniye Vliyaniya Khimicheskogo Stroyeniya na Adgeziyu). Dec 57 [14]p. 23 refs. C. T. S. no. 401.
Order from LC or SLA mi$2.40, ph$3.30 59-18522

Trans. of Zhurnal Fizicheskoy Khimii (USSR) 1956, v. 30, no. 9, p. 1921-1931.

The high value of the work of breaking away and its dependence on the velocity of the breaking away points to the state of inequilibrium of the process, combined with the consumption of work in the separation of the charges of the double layer, which takes place when heterogeneous bodies come into contact. The adhesiogram, expressing on the bilogarithmic scale the relation of the work of breaking away to the velocity of peeling for some polymers consists, in the first approximation, of three rectilinear sections. One of them relating to the minimum velocity, corresponds either to the peeling process in almost equilibrium, or to the process in pseudo-equilibrium, in which part of the charges succeed in discharging completely in the process of breaking away, while the other part does not discharge to a noticeable degree even at the minimum velocities of the breaking away (of the order $10^{-7}$ cm/sec). The third section corresponds to the high breaking away velocities, in which the work of breaking away is limited by the onset of the gaseous discharge according to Pashen's principle, and the breaking away velocity appears to be weak. The middle section corresponds to the case when the gaseous discharge cannot take place in consequence of the discharge of the charges along the surfaces - process, the velocity of which limits the work done on the breaking away. The application of Pashen's principle to the discharge of the double layer during rapid breaking away permits the determination of the discharge density of the double layer $\sigma$. The material influence of the adhesion value is found to be the character of the functional groups of the polymer and the backing. The highest value of adhesion should be possessed by polymers having in their composition functional groups capable of exchanging electrons or protons with the backing, and having the densest packing on the surface of the backing. The highest degree of adhesion is observed where the polar groups enter into the molecules both as adhesives and backings. (Extracted from the report) (See also 59-20133, 60-10036)

Kuznetsov, V. I.
EXTRACTION WITH ORGANIC SOLVENTS OF PENTAVALENT VANADIUM FROM HYDROCHLORIC ACID SOLUTIONS. [1959] 8p. 18 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-10585

Trans. of *Zhurn[al] Obshchey Khimii (USSR) 1952, v. 22, no. 12, p. 2083-2090.

A practically complete extraction of pentavalent vanadium from hydrochloric acid solutions was found to be possible by energetically extracting oxygen containing organic solvents, for example esters (amyl-acetate, amyl-formate) or acetophenone. The aliphatic ketones extract better $V^V$, but they reduce too fast $V^V$ to $V^{IV}$. The fullness of pentavalent vanadium extraction is limited by a partial reduction to the unextractible tetravalent state. The extraction of elements with organic oxygen containing solvents is considered as a consequence of the formation of oxonium type salts. The ability of the elements to form complex anions determines their possibility to be extracted and their ability to be precipitated by organic bases and to give colored reactions with colored organic cations.

Levshin, V. L. and Baranova, E. G.
INVESTIGATION OF THE NATURE OF CONCENTRATION QUENCHING OF DYESTUFFS IN VARIOUS SOLVENTS AND CLASSIFICATION OF DIFFERENT TYPES OF QUENCHING, tr. by Lydia Venters. July 59, 20p. 20 refs.
Order from LC or SLA mi$2.40, ph$3.30 AEC-tr-3775

Trans. of *Optika i Spektroskopiya (USSR) 1959, v. 6, no. 1, p. 55-64.

Different types of transfer of the excitation energy between the molecules in concentrated solutions of a luminescent substance which lead to the quenching and depolarization of the luminescence are discussed in this article. The separation of the effect of energy transfer between monomer and monomer, between monomer and dimer or higher associates, and that of the effect of inactive absorption of nonluminescent associates was carried out. The development of the indicated quenching processes in different solvents, which produce different association stages at the given concentration of the solution, is discussed. The energy transfer to nonluminescent associates, i.e., the energy transfer which leads to quenching, is discussed. (Author)

Markevich, A. M. and Filippova, L. F.
THE FORMATION OF HYDROGEN PEROXIDE DURING OXIDATION OF FORMALDEHYDE (Obrazovaniye Perekisi Vodoroda pri Okislenii Formal'degide). [1959] [10]p. 25 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-19320

Trans. of Zhurnal Fizicheskoy Khimii (USSR) 1957, v. 31 [no. 12] p. 2649-2655.

The peroxides were examined which are formed during oxidation of formaldehyde. The reaction was studied by the stream method for formaldehyde-air mixtures at atmospheric pressure and a temperature of the order of 500°C. On the basis of data from a carbon balance and of the kinetics of interaction between the peroxide and potassium iodide it was shown that the primary peroxide compound is hydrogen peroxide; the reaction products contain up to 27% of the starting formaldehyde in the form of hydrogen peroxide.

Martinyuk, G. A. and Shlygin, A. I.
THE MECHANISM OF THE ELECTROLYTIC OXIDATION AND ELECTROLYTIC REDUCTION OF SOME COMPOUNDS ON PLATINUM (O Mekhanizme Elektrookisleniya i Elektrovosstanovleniya Nekotorykh Soyedineniy na Platine). Oct 59 [13]p. 1 ref. RTS no. 1177.
Order from LC or SLA mi$2.40, ph$3.30 59-22255

Trans. of Zhurnal Fizicheskoy Khimii (USSR) 1958, v. 32, no. 1, p. 164-169.

A study of the direct interaction of molecules of some organic and inorganic substances with the degassed surface of a large platinum electrode (i.e., with a surface free from electrochemically active gases) demonstrated the existence of a direct exchange of electrons between the molecules of the substances and the electrode. Depending on the substance there is observed the transfer of electrons both from the molecule to the electrode ($C_2H_5OH$, $CH_3CHO$, etc.) and also in the reverse direction ($CH_3NO_2$, $C_6H_5NO_2$). The electron exchange process occurs so rapidly that adsorption of the molecules on the electrode does not have time to take place. It is suggested that the electron exchange process depends on the tunnel mechanism. The phenomenon of electron exchange between the electrode and the molecules of the substance is also present in electrocapillary investigations, but, in view of the method used for recording electrocapillary curves, it does not effect the shape of these curves. The suggestion is made that it is possible for electrochemical reactions to occur without a preliminary adsorption of the substance on the electrode.

Mullbauer, E.
METHOD FOR THE PREPARATION OF EMULSIONS, E. G., OF OIL AND WATER. [1959] 3p.
Order from ATS $5.50 ATS-39L34G

Trans. of German patent 957,474, granted 17 Jan 57, pub. 7 Feb 57.

Muth, Ernst.
APPEARANCE OF PEARL CHAIN FORMATION OF EMULSION PARTICLES UNDER THE INFLUENCE OF AN ALTERNATING FIELD, tr. by E. T. Gebert. June 59, 8p. 8 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-18233

Trans. from [Kolloid-Zeitschrift] (Germany) 1927, v. 41, no. 2.

Oliveri-Mandala, E.
THE ACTION OF HYDROGEN PEROXIDE ON NITRILES AND ON AMIDES; THE FORMATION OF HYDROXAMIC ACIDS, tr. by P. M. M. 26 Sep 52, 12p. 21 refs.
Order from SLA mi$2.40, ph$3.30 60-10430

Trans. in manuscript of Gazz[etta] Chim[ica] Ital[iana] 1922, v. 52, no. 1, p. 107-112.

Pétroff, A. D., Karasseff, K. I., and Tschelzova, M. A.
THE ACTION OF TERTBUTYLMAGNESIUM CHLORIDE ON METHYL PROPYL KETONE AND ON ETHYL LAURATE, tr. by P. M. M. 28 Feb 56, 9p. 16 refs.
Order from SLA mi$1.80, ph$1.80 60-10329

Trans. of Soc[iété] Chim[ique de France]. Bull[etin] 1936 [5 ser] v. 3, p. 169-176.

Prüger, Wilhelm.
THEORETICAL TREATMENT OF THE VAPORIZATION PROCESS, tr. by Lydia Venters. June 58, 41p. 69 refs.
Order from LC or SLA mi$3.30, ph$7.80 AEC-tr-3548

Trans. of Akad[emie der] Wiss[enschaften] Wien. Math[ematisch]-naturw[issenschaftliche] K[l]asse. Sitz[ungs]ber[ichte] (Austria) 1940, abt. IIa, v. 149, p. 31-58.

The problem concerning the size of the condensation, respectively the vaporization coefficients of solid and the fluid substances was treated here, on one hand by consideration of the molecular energy and exchange of material on the interface between the vaporizing substance and its vapor, on the other hand by means of a discussion of different emission equations, which were obtained by kinetic considerations of the vaporizing materials. Only such equations can satisfy one which contain assumptions concerning the force fields between the surface and vapor molecules. The prospects of the wave-mechanical treatment are emphasized. These qualitative considerations show that the K. - K. of solid but also of liquid substances even on the purest vaporizing surfaces can adopt values smaller than 1. The old question, whether the vapor (at the boiling point) over vaporizing (resp. superheated), pure liquids also equally superheats the surface of the liquid or whether it leaves the surface at the boiling temperature, cannot yet at all be decided at this time exactly only by means of special hypothetical assumptions concerning the structure of the liquid. If one assumes the potential of the cohesion forces in the liquid as pure position function and as being independent of the velocity of the molecules, it becomes evident that the vapor essentially has to show the temperature of the surface. A completely general consideration shows that the average temperature of the vapor, which sets in at a stationary state of the "evaporation" over a superheated liquid, generally depends on the nature of the liquid and can adopt any value lying between the surface and boiling temperature. (Author)

Rebinder, P. A. and Segalova, E. E.
INVESTIGATION OF ELASTIC-PLASTIC-VISCOUS PROPERTIES OF STRUCTURED DISPERSED SYSTEMS (Issledovaniye Uprugo-plastichno-vyazkikh Svoystv Strukturovannykh Dispersnykh Sistem) tr. by K. P. R. Ehrenberg. Oct 51 [4]p. 6 refs. Library Communication no. 535; T/L 862; M193.
Order from LC or SLA mi$1.80, ph$1.80 59-19087

Trans. of Akademiya Nauk SSSR. Doklady, 1950, v. 71, no. 1, p. 85-88.

A simple system of parameters is explained which allows predictions about the behavior in deformation of investigated systems, and frequently about the relaxation processes occurring in them.

Ryss, I. G. and Yatlov, V. S.
DESCRIPTION OF A METHOD OF SEPARATION OF HYDROGEN FLUORIDE AND SILICON TETRAFLUORIDE. [1959] 2p.
Order from ATS $4.50 ATS-42L35R

Trans. of Russian patent 36, 392, filed 20 Oct 33 (appl. no. 136, 457) granted 31 May 34.

Schlachter, A. and Dierkes, H.
A NEW APPARATUS FOR FOAM-DETERMINATION, tr. by G. G. S. 10 Aug 51, 10p. [figs. omitted] 11 refs.
Order from SLA mi$1.80, ph$1.80 60-10394

Trans. in manuscript of [Fette Seifen Anstrichmittel] (West Germany) 1951, v. 53 [no. 4] p. 207-209.

Seith, W[olfgang].
DEFINITION OF THE DIFFUSION COEFFICIENT AND FICK'S EQUATIONS (Definition des Diffusionskoeffizienten und Ficksche Gleichungen). [1959] [37]p. (refs. omitted) (foreign text included).
Order from LC or SLA mi$3.00, ph$6.30 AEC-tr-3768

Trans. of mono. [Diffusion in Metallen, Berlin] 1955, chap. 2, p. 4-21.

Storonkin, A. V., Morachevskiy, A. G., and Kudryavtseva, L. S.
THE EFFECT OF TEMPERATURE AND PRESSURE ON THE COMPOSITION OF TERNARY AZEOTROPES. [1959] 10p.
Order from ATS $12.80 ATS-71L35R

Trans. of Zhur[nal] Fiz[icheskoy] Khim[ii] (USSR) 1957, v. 31, no. 2, p. 395-402.

Suvorov, B. V., Rafikov, S. R., and Anuchina, I. G.
MECHANISM OF VAPOUR PHASE OXIDATION OF TOLUENE BENZYL ALCOHOL AND BENZALDEHYDE IN PRESENCE OF VANADIUM OXIDES. [1959] [5]p. 23 refs. TL1155; M264.
Order from LC or SLA mi$1.80, ph$1.80 59-19143

Trans. of [Akademiya Nauk SSSR]. Doklady, 1953, v. 88, no. 1, p. 79-82.

The vapour phase oxidation of toluene, benzyl alcohol and benzaldehyde has a common mechanism. The formation of products of complete oxidation ($CO_2$ and $H_2O$) proceeds via specific intermediate products of incomplete oxidation and is not a process proceeding in parallel, as several workers have suggested. The quantitative yield of all the intermediate products of the oxidation of toluene, benzyl alcohol and benzaldehyde depends to a great extent on the reaction conditions and is governed both by the velocity and course

of the preceding stages of the reaction and by the chemical and thermal stability of the compounds formed in the given conditions. (Extracted from the report)

Teltow, J.
IONIC CONDUCTION AND DISORDER OF SILVER BROMIDE WITH ADDITIONS OF BIVALENT CATIONS. I. CONDUCTIVITY MEASUREMENTS AND PHASE DIAGRAMS. (Zur Ionenleitung und Fehlordnung von Silberbromid mit Zusatzen zweiwertiger Kationen. I. Leitfahigkeitsmessungen und Zustandsdiagramme). [1959] [17]p. 12 refs. (includes foreign text).
Order from LC or SLA mi$2.40, ph$3.30 AEC-tr-3596

Trans. of Annalen der Physik (Germany) 1949 [6. Ser.) v. 6, no. 6, p. 63-70.

The electric conductivity of solid silver bromide with additions of CdBr2, as well as PbBr2, CaBr2 and ZnBr2 is measured at various temperatures in the homogenous mixed crystal region determined by special investigations. Individual influences of the addition ions are overshadowed by the effect of their double charge. (Author) (See also 59-12965)

Tolstoy, D. M.
DETERMINATION OF THE CHARACTERISTIC FUNCTION OF A STATIONARY FLOW USING THE CAPILLARY METHOD IN THE CASE OF SLIP ALONG THE WALL (Opredeliniye Kharakteristicheskoy Funktsii Statsionarnogo Potoka Kapillyarnym Metodom v Sluchaye Pristennogo Skolzheniye), tr. by K. P. R. Ehrenberg. Jan 52, 6p. 11 refs. Library Communication no. 549; T/L 866; M197.
Order from LC or SLA mi$1.80, ph$1.80 59-19091

Trans. of Kolloidnyy Zhurnal (USSR) 1930, v. 12, no. 1, p. 62-66.

The possibility of deriving the velocity gradient in a disperse system as a function of the shear stress by means of the capillary method is not restricted by the wall effect, rather only by the fact that the function is not single-valued, i.e., by thixotropy. In conditions where the function can be considered invariant for the duration of the test, it can be computed, equally as also the velocity of the slip along the wall, simply on the basis of the data derived from a capillary viscometer. (Author).

Vartanyan, A. T. and Karpovich, I. A.
THE SEMICONDUCTOR PROPERTIES OF PHTHALOCYANINES. II. THE SPECTRAL DEPENDENCE OF PHOTOCONDUCTIVITY AND THE OPTICAL ACTIVATION ENERGY OF PHTHALOCYANINES [Poluprovodnikovyye Svoystva Ftalotsianinov. II. Spektral'naya Zavisimost' Fotoprovodimosti i Opticheskaya Energiya Aktivatsii Ftalotsianinov]. [1959] 8p.
Order from ATS $14.60 ATS-60L36R

Trans. of Zhur[nal] Fiz[icheskoy] Khim[ii] (USSR) 1958, v. 32, no. 2, p. 274-281.

Voyutskiy, S. S. and Zemazy, V. M.
A STUDY OF THE AUTO-ADHESION (TACK) OF POLYISOBUTYLENE. [1959] 4p. 1 ref. TL 1160; M263.
Order from LC or SLA mi$1.80, ph$1.80 59-19142

Trans. of [Akademiya Nauk SSSR. Doklady] 1951, v. 81, no. 1, p. 63.

Experiments are described which confirmed the previous opinion (Uspekhi Khimii 18: 449, 1949 or technical translation 59-15938) that autoadhesion is a diffusion phenomenon.

Wienecke, R.
ON THE APPEARANCE OF JETS IN CARBON ARCS OF A HIGH CURRENT INTENSITY, II. (Dampfstrahlen in Kohlilichtbogen hoher Stromstärken, II) [1959] [29]p. (15 formulae omitted) 10 refs.
Order from LC or SLA mi$2.70, ph$4.80 AEC-tr-3745

Trans. of Z[eitschrift] für Physik (West Germany) 1958, v. 151 [no. 2] p. 159-173.

Based on repulsion measurements on the cathode it is proved that the acceleration of vapor jets occurring in carbon arcs of high current intensities is caused primarily by changes in density during sublimation of the cathode material. Estimations of the vapor jet velocity from repulsion measurements and consumption measurements result in values of about 10 km/sec directly above the cathode, which corresponds approximately to twice the velocity of sound. By means of a current impulse method the velocity in the arc axis from the anode up to a distance of 1 cm to the cathode is measured directly from slow-motion pictures; at closer distances to the cathode it is measured from the occurring Mach-angle with an externally applied interference. Extrapolation of the measured velocity curve on the cathode surface confirms the stated interpretation. (Author)

Yatlov, V. S.
DESCRIPTION OF A METHOD OF SEPARATION OF HYDROGEN FLUORIDE AND SILICON TETRAFLUORIDE IN THE GAS PHASE. [1959] 2p.
Order from ATS $4.50 ATS-41L35R

Trans. of Russian patent 30, 268, filed 29 May 32 (appl. no. 110, 079) granted 31 May 33.

Zdanovskiy, A. B.
A NEW METHOD OF DETERMINING THE SOLUBILITIES OF ELECTROLYTES IN POLYCOMPONENT SYSTEMS, I (Novyy Metod Raschota Rastvorimostey Elektrolitov v Mnogokomponentnykh Sistemakh, I.) tr. by K. P. R. Ehrenberg. May 51 [10]p. 52 refs. Library Communication no. 374; T/L 869; M200.
Order from LC or SLA mi$1.80, ph$1.80 59-19094

Trans. of Zhurnal Fizicheskoy Khimii (USSR) 1948, v. 22, no. 17, p. 1478-1485.

A new method has been developed for the computation of the solubilities of electrolytes in systems with a number of components higher than three, based on the solubilities of electrolytes in ternary systems for equal activity of the waters of solutions. (Author)

ACTIVITIES IN THE ARCTIC AND ANTARCTIC [NO. 13, 2 DEC 59]. [1959] [9]p. 9 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-13070

Trans. of unevaluated information selected from foreign-language publications.

Contents:
Soviet Arctic activities
Flights in the Arctic
Polar stations aid Arctic navigation
New polar station established
Magadan Scientific Conference discusses far north development
Belgian Antarctic activities
Plans for Third Belgian Antarctic Expedition
Belgian base launches sounding balloons

Watermann, H.
TIDAL CORRECTIONS FOR MEASURED VALUES OF GRAVITY. [1959] 4p.
Order from ATS $5.00 ATS-26L35G

Trans. of Akademie der Wissenschaften, Munich. Deut[sche] Geod[ätische] Komm[ission]. Veröffentl[ichungen]. Reihe A (West Germany) 1955, no. 10b, p. 33-35.

Zubyan, G. D.
INVESTIGATION OF A SPATIAL FRONTAL MODEL WHICH INCLUDES THE ENTIRE TROPOSPHERE AND THE LOWER STRATOSPHERE (Issledovaniye Prostranstvennoy Modeli Fronta, Okhvatyvayushchey Vsyu Troposferu i Nizhnyuyu Stratosferu) tr. by Geraldine Kline. Nov 58 [11]p. 2 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-16569

Trans. of Meteorologiya i Gidrologiya (USSR) 1957, no. 5, p. 3-11.

The use of a large spatial model of the front, whose vertical sections are constructed on the basis of aerological data and embrace the whole troposphere and the lower stratosphere, is proposed as the basis for synoptic analysis and weather forecasting in the middle and high latitudes. The proposed model features the connection between jet streams and frontal zones, which shows up in the vertical sections. An examination of a vertical cross section, which extended from Aleksandrovsk (far eastern part of the USSR) to Rome and simultaneously intersected six warm and cold portions of the same frontal zone, and which was tracked for several days in the spring of 1955, shows that the connection between a jet stream and a frontal zone remains so close and clearly expressed over a long period of time that the future movement of the jet stream can be predicted from an estimate of the future movement of the frontal zone. A regular connection was noted between variations of the tropopause and the frontal zones.

*METEOROLOGIYA I GIDROLOGIYA (USSR) 1959, NO. 9, P. 3-59 (Meteorology and Hydrology). [1959] [19]p. SOV-50-59-9-(1-16)/16.
Order from OTS $0.70, $4.00/6 mo. PB 141 045T-22
Foreign $0.95, $5.50/6 mo.

Consists of abstracts in English.

Dyubyuk, A. F.
VERTICAL MOVEMENTS IN THE AREAS OF MOVING FRONTS (O Vertikal'nykh Dvizheniyakh v Oblast'akh Dvizhushchikhs'ya Frontov) tr. by Marcel I. Weinreich. 8 May 59, 16p. 5 refs.
Order from LC or SLA mi$2.40, ph$3.30 SCL-T-251

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1956, no. 9, p. 1091-1098.

We conducted a test of utilizing formulas for the determination of vertical movements in a given field of pressure, in the case of baric fields connected with moving warm and cold fronts. (Author)

Maruyama, Eizo.
MICROMETEOROLOGY. [1959] 10p. 107 refs.
Order from MDF $5.00 MDF M-121

Trans. of Sokko Jiho (Japan) 1957, no. 24, p. 365-370.

A survey.

Mordukhovich, M. I.
LOCAL ACOUSTICAL METHOD FOR MEASURING AIR TEMPERATURE. 25 Sep 59 [17]p. incl. figs. 8 refs. JPRS: L-985-N.
Order from OTS $0.50 59-13886

Trans. of *Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1959, no. 3, p. 480-488.

It is possible to measure the temperature in the free atmosphere according to the speed of sound by utilizing the local method, i.e., by raising aloft both the receiver and the sound source, located at a small distance from each other. This local acoustic method makes it possible to explore the fine structure of the temperature field in the atmosphere, to establish more correctly the errors of other instruments (in particular, radiosondes), and to determine the daily course of temperature and the influence of the sun on the temperature of the lower and middle stratospheres. The acoustic method is a direct method, because there is absent any thermometric body, and the measured parameter - speed of sound in the air - is proportional to the root-mean-square velocity of the motion of molecules. (Extracted from the report)

## Frost Science

Demin, I. D.
THE INFLUENCE OF THE RESOLUTION OF RADAR STATION ON THE ACCURACY OF DETERMINATION OF ICE CONCENTRATION (Vliyaniye Razreshayushchey Sposobnosti Radiolokatsionnoy Stantsii no Tochnost' Otsenki Splochennosti l'Dov) tr. by Valda Dreimanis. Aug 58 [13]p. 2 refs; AD-220 467.
Order from LC or SLA mi$2.40, ph$3.30 59-18994

Trans. of Problemy Arktiki (USSR) 1958, no. 3, p. 61-67.

The resolution of the aircraft panoramic radar station is shown to determine the condition of individual reception of signals from orientation points situated near each other. If the dimensions of the water expanses between the ice floes and the transverse dimensions of the ice floes are equal to (or larger than) the linear values of the radar station's azimuth and range resolution, the estimate of ice concentration will be more accurate. With a typical station (one with a 0.5-μsec pulse duration and an antenna beam width of 3°) the ice concentration can be accurately determined only if the aircraft flies over hummocked fields and in part over fragments of ice fields. Large errors (toward exaggeration) can occur in estimates of the concentration of broken ice.

Selyakov, N. Ya.
SOME OBSERVATIONS ON ICE AND THE PROCESSES ASSOCIATED WITH ITS FORMATION (Nekotoryye Nablyudeniya nado L'dom i Protsessami Svyasannymi Syego Obrazovaniyem) tr. by K. P. R. Ehrenberg. June 51 [5]p. 4 refs. Library Communication no. 497; T/L 864; M195.
Order from LC or SLA mi$1.80, ph$1.80 59-19089

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1950, v. 70, no. 5, p. 821-824.

## Geology

PROCEEDINGS OF THE ACADEMY OF SCIENCES OF THE USSR. GEOLOGICAL SCIENCES SECTIONS, 1958, VOL. 122, NOS. 1-6, P. 729-883. 1959, 1v.
Order from CB $40.00, $200.00/year

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 122, no. 1, p. 58-62ff and p. 115-123ff; no. 2, p. 211ff, p. 281-286ff and p. 289ff; no. 3, p. 449-469ff and p. 473ff; no. 4, p. 679-687ff and p. 691ff; no. 5, p. 795ff, p. 879-902ff and p. 905-909ff; no. 6, p. 1007ff, p. 1079-1094ff, p. 1098ff and p. 1100-1103ff.

Fomina, E. V.
THE PROBLEM OF THE STRUCTURE OF THE TEST WALL OF SOME VISEAN FORAMINIFERA OF THE MOSCOW BASIN. [1959] 3p.
Order from ATS $6.00 ATS-10L36R

Trans. of Voprosy Mikropaleontol[ogii] (USSR) 1958 [v. 2] no. 2, p. 121-123.

Nechayeva, N. B.
STUDY OF THE PROCESS OF METHANE FORMATION UNDER THE INFLUENCE OF MICROORGANISMS FROM CORE SAMPLES OF THE GAS AND OIL STRATA IN THE SECOND BAKU. [1959] 11p. 21 refs.
Order from LC or SLA mi$2.40, ph$3.30 60-10648

Trans. of Mikrobiologiya (USSR) 1955, v. 24 [no. 1] p. 3-[13].

Papp, A.
NUBECULARIA FROM THE SARMATIAN STAGE OF WIESEN (BURGENLAND). [1959] 7p.
Order from ATS $8.25 ATS-06K26G

Trans. of Burgenlandische Heimatblatter (Austria) 1955, v. 17, no. 2, p. 49-55.

Smirnova, Z. S.
THE DETERMINATION OF THE PENETRATION RANGE OF BACTERIA FROM DRILLING MUDS INTO THE CORES OF VARIOUS ROCKS. [1959] 7p. 7 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-10649

Trans. of *Mikrobiologiya (USSR) 1957, v. 26, no. 6, p. 745-749.

## Mineralogy

Everling, G.
DETERMINATION OF STRESSES BY MEANS OF MEASUREMENTS MADE IN HOLES DRILLED IN COAL AND IN ROCK (Détermination de Contraintes par Mesures Faites dans les Trous Forés au Charbon et au Rocher) tr. by M. E. Day. May 59 [45]p. 6 refs. (foreign text included). Trans. no. 348.
Order from LC or SLA mi$3.30, ph$7.80 59-18560

Trans. of Revue de l'Industrie Minerale (France) 1957, v. 39, no. 7, p. 629-643.

Ramdohr, Paul.
THE "PRONTO-REACTION" (die "Pronto-Reaktion"). [1959] 7p.
Order from LC or SLA mi$1.80, ph$1.80 AEC-tr-3562

Trans. of Neues Jahrbuch fur Mineralogie. Monatshefte (West Germany) 1957, p. 217-221.

The occurrence of brannerite in ilmenite and pitchblende of the Pronto Mine (near Blind River, Ontario) is explained by the reaction

$$UO_2 + (2 \text{ to } 3)TiO_2 = UTi_{2-3}O_{6-8}.$$

Yussupova, S.
A NEW METHOD OF FORMATION OF MONTMORILLONITE, tr. by B. Butterworth. July 51, 5p. 2 refs. Library Communication no. 569; T/L 868; M199.
Order from LC or SLA mi$1.80, ph$1.80 59-19093

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1950, v. 75, no. 3, p. 445-447.

Experiments were performed to verify the contention that in moist soil conditions there is a replacement of magnesian silicates, in particular kerolite, and the hydrates of alumina, generally boehmite, by montmorillonite.

## Oceanography

Balech, E.
ZOOGEOGRAPHIC DIVISION OF THE SOUTH-AMERICAN COAST. III. (Division Zoografica del Litoral Sudamericano). [1959] 11p. 14 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-18323

Trans. of Revista de Biologia Marina (Chile) 1951, v. 4, nos. 1-3, p. 184-195.

Ellenberger, H.
WORK OF THE GERMAN GEODETIC RESEARCH INSTITUTE ON EARTH TIDE RESEARCH. [1959] 10p.
Order from ATS $12.50 ATS-27L35G

Trans. of Akademie der Wissenschaften, Munich. Deut[sche] Geod[ätische] Komm[ission]. Veröffentl[ichungen]. Reihe A (West Germany) 1955, no. 10b, p. 7-16.

## ENGINEERING

KHOLODIL'NAYA TEKHNIKA (USSR) 1959 [VOL. 36] NO. 4, P. 1-79 (Refrigeration Engineering). [1959] 1v. SOV-66-59-4-(1-28)/28.
Order from OTS $0.70, $2.50/year PB 141 061T-4
Foreign $0.95, $3.50/year

Consists of abstracts in English.

RAZVEDKA I OKHRANA NEDR (USSR) 1959 [VOL. 25] NO. 8, P. 1-63 (Exploration and Conservation of Natural Resources) [1959] 1v. SOV-132-59-8-(1-18)/18.
Order from OTS $0.50, $3.00/6 mo. PB 141 135T-19
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

RAZVEDKA I OKHRANA NEDR (USSR) 1959 [VOL. 25] NO. 9, P. 1-63 (Exploration and Conservation of Natural Resources). [1959] [18]p. SOV-132-59-9-(1-13)/13.
Order from OTS $0.50, $3.00/6 mo. PB 141 135T-18
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

Bochkarev, V. G.
THE INVESTIGATION OF ROCK PRESSURE PHENOMENA IN MINE WORKINGS BY THE METHODS OF THE MECHANICS OF A COMPACT-MASS MEDIUM (K Voprosu Issledovaniya Proyavlenii Gornogo Davleniya v Ochistnykh Vyrabotkakh na Osnove Metodov Mekhaniki Sploshnoy Sredy). Aug 59 [11]p. 3 refs. RTS no. 1066.
Order from LC or SLA mi$2.40, ph$3.30 59-19443

Trans. of Ugol' (USSR) 1958 [v. 33] no. 7, p. 24-28.

K. V. Ruppeneit's book entitled Pressure and Dislocation of Rocks in Long Walls in Gently Dipping Seams is attacked. The short-comings noted include those in the calculation scheme and in the method used for determining roof displacements and pressure on props. "The method proposed [by Ruppeneit] for calculating the main parameters of supports in long walls is based on a calculation scheme which is remote from reality, and does not correctly reflect the nature of the stress and strain condition of the roof over long walls, and contains recommendations which have not been approved and which are essentially unacceptable for practice use."

Kagan, E. B. and Ostrovskiy, A. P.
AN INVESTIGATION OF THE REMOVAL OF LARGE ROCK FRAGMENTS FROM WELLS. [1959] 9p.
Order from ATS $13.85 ATS-69L34R

Trans. of Neftyanoye Khoz[yaystvo] (USSR) 1959, v. 37, no. 4, p. 24-31.

Karpov, A. B.
AN EXPERIMENT IN CONSTRUCTING QUADRATURE FORMULAE FOR SHIPBUILDING CALCULATIONS (Opyt Konstruirovaniya Kvadraturnykh Formul dlya Korablestroitel'nykh Raschotov). Sep 59 [20]p. 2 refs. RTS no. 1115.
Order from LC or SLA mi$2.40, ph$3.30 59-19816

Trans. of Vsesoyuznoye Nauchnoye Inzherno-Tekhnicheskoye Obshchestvo Sudostroyeniya. Trudy (USSR) 1957, v. 7, no. 2, p. 183-204.

Roy, Maurice.
APICAL VORTICES AND TRUMPET-SHAPED VORTEX SHEETS (Sur la Théorie de l'Aile en Delta - Tourbillons d'Apex et Nappes en Cornet) tr. by S. Reiss. [1959] [23]p. 7 refs. NASA E-115.
Order from LC or SLA mi$2.70, ph$4.80 59-16778

Trans. of la Recherche Aéronautique (France) 1957, no. 56, p. 3-12.

The general problem of flow phenomena on thin delta wings is discussed, with the purpose of establishing the experimental background for development of a suitable theory. Some general equations for the trumpet-shaped vortex sheet are developed, but no solutions are attempted. A simplified approach, representing the trumpet-shaped sheet with a continuous distribution of vorticity and with sources and sinks in the flow is suggested. Attempts at calculation of the flow using the simplified approach are currently in progress. (Author)

Slobodov, M. A.
TEST APPLICATION OF THE LOAD-RELIEF METHOD FOR INVESTIGATING STRESSES IN DEEP ROCK (Opyt Primeneniya Metoda Razgruzki pri Issledovanii Napryazhenii v Glubine Gornogo Massiva). Sep 59 [14]p. (2 figs. omitted) 7 refs. RTS no. 1068.
Order from LC or SLA mi$2.40, ph$3.30 59-19817

Trans. of Ugol' (USSR) 1958 [v. 33] no. 7, p. 30-35.

Experimental investigations confirmed the advisability of using the load-relief method for obtaining the comparative stress condition deep down in the rock mass. This method offers an approach to the discovery of the pressure and strain processes occurring in the loaded mass, and yields valuable information which helps to explain the causes of shock disturbances and the conditions in which they originate. The use of the method under the conditions of the "Kapitalnaya" No. 2 pit, when pressures in the seam amount to critical, cannot be recommended, since it would contradict the principle of a method which permits the determination of stresses in material where pressure is 70 to 80 per cent of critical.

Smolyaninov, V.
THIS METHOD HAS A GREAT FUTURE (Etogo Metoda Bol'shoye Budushcheye). 18 June 59 [5]p. 1 ref. AF 1255874.
Order from LC or SLA mi$1.80, ph$1.80 59-18429

Trans. from Izvestiya (USSR) 1959, no. 108, p. 2, col. 1-3.

A new electrochemical method of shaft reinforcement is discussed. This method is based on transformation of rock properties by electrochemical strengthening. In addition to strengthening the walls of a shaft; it is useful in sealing the fluid absorption zones, water-bearing zones and zones of separation of oil producing strata.

Usachev, P. M., Leskik, N. P., and others.
HYDRAULIC FRACTURING OF A FORMATION WITH SUBSURFACE OBSERVATION OF THE FRACTURE ZONE. [1959] 11p.
Order from ATS $13.15 ATS-97L30R

Trans. of Neft[yanoye] Khoz[yaystvo] (USSR) 1958, v. 36, no. 5, p. 28-37.

## Chemical Engineering

DISTILLATION ENGINEERING RESEARCH AND DEVELOPMENT IN THE USSR. [1959] [13]p. 36 refs. PAL 59-10.
Order from OTS $0.50 60-21040

Soviet basic research related to distillation, particularly in such phases as thermodynamics, vapor-liquid equilibria, and kinetics of phase transformation, compares favorably with U. S. research of a similar type. Soviet chemical engineering activities in general, and distillation in particular, are probably unfavorably influenced by physical chemists who perform the functions normally performed by chemical engineers. Thus, the apparent close relationship that exists between physical chemists and chemical engineers in the USSR is not beneficial to the utilization of research efforts by industry. Chemical engineers who are working on applied research in the Soviet Union are less capable than and about 10 years behind their counterparts in the United States, but the gap is closing. The USSR appears to be 10 to 15 years behind the United States in the application of distillation techniques and practices in the chemical industry. The Soviets make little or no use of mathematical statistics in either the design or operation of distillation equipment. This is completely contrary to modern practice and must be considered as a serious handicap to Soviet efforts dealing with complex systems. Nevertheless, the wide dissemination of distillation data and practices in the Soviet Union should assist in alleviating this backwardness. These conclusions are based on a statistical summation of a large number of Soviet articles and comparison with equivalent U. S. publications, and an intensive evaluation of the Soviet position in various aspects of the field based on the more important articles. The articles in the summation approach cover the period 1940-57, and the ones selected for intensive evaluation cover the period from 1951 to 1957. Other information to May 1959 has also been considered.

PETROLEUM INDUSTRY, USSR. 16 Sep 59 [12]p. (3 illus. omitted) AF 1256090.
Order from LC or SLA mi$2.40, ph$3.30 59-19698

Trans. from Promyshlenno-Ekonomicheskaya Gazeta (USSR) 1959, no. 66, p. 2, c. 3-4; no. 77, p. 2, c. 5-6; no. 80, p. 1, c. 4-6; no. 85, p. 4, c. 5-6; no. 86, p. 2, c. 3-5; no. 87, p. 4, c. 1-3 and c. 6-7.

Topic headings are entitled: (1) Cable workers wait for new chemical materials, (2) Methane electrocracking unit at the Saratov synthetic alcohol plant, (3) 1964 - The big year, (4) The Polish chemical kombinat "Osventsim", (5) Petroleum refinery automation, (6) Polyamides are replacing metal, (7) A reliable anti-corrosive material, (8) Low-temperature vulcanization of rubber, and (9) The Sumgait synthetic rubber plant.

PROCESS FOR THE PREPARATION OF PENTAERYTHRITOL. [1959] 6p.
Order from ATS $13.85 ATS-58L33F

Trans. of French patent 744,397, filed 21 Oct 32, by Deutsche Gold- und Silber- Scheideanstalt vormals Roessler, granted 21 Jan 33, pub. 19 Apr 33.

PROCESS FOR THE PREPARATION OF PENTAERYTHRITOL. [1959] 6p.
Order from ATS $12.65 ATS-60L33F

Trans. of French patent 786,909, filed 14 Feb 35 by Lonza Elektrizitatswerke und Chemische Fabriken Aktiengesellschaft, Switzerland, pub. 14 Sep 35.

PROCESS OF DEHYDROGENATION OF ALIPHATIC COMPOUNDS BY MEANS OF HALOGENS, tr. by J. C. Levy. 23 Oct 59, 11p. 1 ref.
Order from LC or SLA mi$2.40, ph$3.30 59-22277

Trans. of French patent 849,804, gr. 14, cl. 4, appl. 3 Feb 39, granted 28 Aug 39, pub. 2 Dec 39, by I. G. Farbenindustrie Aktiengesellschaft, Germany (appl. filed in Germany 14 Feb. 38).

The process consists in causing the starting materials to react with halogen at an elevated temperature and then subjecting the reaction gases to an elevated temperature. The operation is carried out in the presence of catalysts or of filling materials. After heating of the reaction gases a fresh halogenation is carried out.

Alekseyeva, K. A. and Moldavskiy, B. L.
CONVERSION OF THE OXYGEN-CONTAINING COMPOUNDS OF CHEREMKHOVO TAR DURING LIQUID-PHASE HYDROGENATION. [1959] 7p.
Order from ATS $9.75 ATS-39L31R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1958, v. 3, no. 10, p. 7-11.

Bach, Günther, and Zahn, Manfred.
PREPARATION OF $\Delta^2$-THIAZOLINES AND $\Delta^2$-DIHYDRO-1,3-THIAZINES. [1959] 9p. 12 refs.
Order from RIS $11.50 RIS JPC 18

Trans. of Journal für Praktische Chemie (East Germany) 1959, ser. 4, v. 8, no. 1/2, p. 68-72.

Substituted $\Delta^2$-thiazolines are produced by reacting O, N-diacylethanol-amines or their substitution products with diphosphorpentasulfide. In a similar manner $\Delta^2$-dihydro-1, 3-thiazines are obtained from O, N-diacyl-3-aminopropaneoles. (Author)

Bogoroditskiy, K. F.
CONCERNING THE NATURE OF HYDROGEOLOGICAL RESEARCH ON THE GASIFICATION OF COAL DEPOSITS. [1959] 6p. 1 ref.
Order from LC or SLA mi$1.80, ph$1.80 59-18333

Trans. of Podzemnaya Gazifikatsiya Ugley (USSR) 1957, v. 1, no. 1, p. 65-67.

Discussions are presented on (1) research for determination of permissible water quantity in the preparation of coal for underground gasification, (2) determining the water quantity necessary to the process of underground gasification of coal, (3) research on methods of controlling the water regime in underground gas generators, and (4) research for the study of the regime of underground water under conditions of underground gasification of coal.

Bozidar, Popovic.
PROCESS FOR ACCELERATING THE REACTION IN THE PRODUCTION OF PENTAERYTHRITOL $C(CH_2OH)_4$ AND ITS PRODUCTION IN THE PURE STATE. [1959] 2p.
Order from ATS $3.50 ATS-64L33CR

Trans. of Yugoslavian patent 11,067, filed 10 Aug 33, granted 1 Mar 34, pub. 1 Aug 34.

Gel'perin, N. I. and Solopenkov, K. N.
A CONTINUOUS PROCESS FOR THE SAPONIFICATION OF BORIC ESTERS OF THE HIGHER FATTY ALCOHOLS WITH SIMULTANEOUS EXTRACTION AND REGENERATION OF THE BORIC ACID (Nepreryvnyy Protsess Omyleniya Bornykh Efirov Vysshikh Zhirnykh Spirtov s Odnovremennoy Ekstraktsii i Regeneratsii Bornoy Kisloty). July 59 [12]p. 3 refs. RTS no. 1036.
Order from LC or SLA mi$2.40, ph$3.30 59-18848

Trans. of Khimicheskaya Nauka i Promyshlennost' (USSR) 1956, v. 1, no. 3, p. 324-331.

The arrangement consists of a continuous hydrolyser, two tubular extraction columns, a crystalliser, a filter centrifuge, and a single-bodied continuous evaporator. The concentrated solution of boric acid, on leaving the hydrolyser, is led straight into the crystalliser and then into the centrifuge, from which the crystalline boric acid is removed for further use, and the mother liquor is led into the evaporator. In the latter, the solution is evaporated at atmospheric pressure to a concentration of 20 to 25 percent, after which it is again led into the crystalliser and centrifuge. The secondary steam from the evaporator proceeds in parallel fashion into both extraction columns. The solution of boric acid, on leaving the first column is directed to the evaporator, and from second column a part is led to the evaporator, and the remainder to the hydrolyser, where a small amount of condensate

of the heating steam is added to achieve a material balance. The main advantages of the scheme are: (a) the setting up of an extraction process using secondary steam, obtained in the evaporation of weak solutions of boric acid, i. e., without wasting live steam; (b) the direct separation of more than 75 percent of boric acid after the hydrolyser; (c) the linking up of the saponification process with the regeneration of boric acid from the point of view of the material balance; and (d) the absence of a condenser for the secondary steam and transfer pumps to provide counter-current of the alcohols and water in the extraction columns.

Govorkov, V. M. and Averbukh, Ya. D.
METHODS OF CALCULATING MASS TRANSFER IN APPARATUS WITH CONTINUOUS CHANGE OF DRIVING FORCE AND IN STAGED TYPE APPARATUS. [1959] 8p.
Order from ATS $8.25 ATS-31L36R

Trans. of *Zhur[nal] Priklad[noy] Khim[ii] (USSR) 1959, v. 32, no. 4, p. 801-807.

Kosarev, N. N. and Makovskiy, S. A.
REMOVAL OF PARAFFIN FROM THE BOTTOM-HOLE ZONE WITH AN ELECTRIC HEATER. [1959] 5p.
Order from ATS $6.55 ATS-65L34R

Trans. of Neftyanoye Khoz[yaystvo] (USSR) 1959, v. 37, no. 3, p. 56-58.

Meyerevich, E. A.
THE APPLICATION OF ELECTRIC CURRENT FOR PURPOSE OF UNDERGROUND GASIFICATION. [1959] [13]p. 1 ref.
Order from LC or SLA mi$2.40, ph$3.30 59-18327

Trans. of Podzemnaya Gazifikatsiya Ugley (USSR) 1957 [v. 1] no. 2, p. 67-74.

Noskov, A. A. and Sokolov, V. N.
CALCULATION OF THE HYDRAULIC RESISTANCE OF SIEVE PLATES. [1959] 7p.
Order from ATS $9.25 ATS-84L35R

Trans. of Khim[icheskaya] Nauka i Prom[yshlennost'] (USSR) 1958, v. 3, no. 4, p. 518-520.

Orochko, D. I., Adel'son, S. V., and others.
THE SPECIAL FEATURES OF STEPWISE COUNTERCURRENT CATALYTIC CRACKING OF HEAVY DISTILLATE FEED STOCKS. [1959] 8p.
Order from ATS $12.60 ATS-22L35R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1959, v. 4, no. 4, p. 48-53.

Pire, E.
THE WASHING BY CYCLONES OF FINE COALS OF LESS THAN 2 mm. [1959] 16p. (2 figs. 1 table omitted) 2 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-18538

Trans. of Annales des Mines de Belgique, 1956, June, Spec. Issue, p. 31-37.

A lecture.

Schubert, S.
PRACTICAL RESULTS WITH A HYDROGEN-PERMUTIT SOFTENING PLANT. [1959] 7p. (5 figs. refs. omitted).
Order from SLA mi$1.80, ph$1.80 60-10572

Trans. of Archiv f[ür] Wärmewirtschaft [und Dampfkesselwesen] (Germany) 1938, v. 19, May, p. 129-131.

Yudin, I. D. and Grigoryev, V. V.
STABILITY OF THE UNDERGROUND GASIFICATION PROCESS IN THE UNDERGROUND GAS GENERATORS AT THE YUZHNO ABINSK PODZEMGAZ STATION. [1959] [5]p. 4 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-18375

Trans. of Podzemnaya Gazifikatsiya Ugley (USSR) 1958, v. 2, no. 1, p. 41-43.

## Civil Engineering

BETON I ZHELEZOBETON (USSR) 1959, NO. 3, P. 97-144 (Concrete and Reinforced Concrete). [1959] [22]p. SOV-97-59-3-(1-15)/15.
Order from OTS $0.50, $3.00/6 mo. PB 141 090T-15
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

Abramovich, I. I.
CALCULATING THE STABILITY OF BUILDERS' TOWER CRANES (K Voprusu Rascheta Ustoychivosti Stroitel'nykh Bashennykh Kranov) tr. by K. P. R. Ehrenberg. June 52 [13]p. 1 ref. Library Communication no. 588; TL 873; M201.
Order from LC or SLA mi$2.40, ph$3.30 59-19095

Trans. of Mekhanizatsiya Stroitel'stva (USSR) 1951, v. 8, no. 4, p. 14-17.

Grinkevich, P. S.
DESIGN OF CRANES FOR THE MECHANISATION OF HOUSE BUILDING (O Tipe Kranov dlya Mekhanizatsii Grazhdanskoyo Stroitel'stva) tr. by K. Simon. July 52 [10]p. 2 refs. Library Communication no. 601; TL 875; M203.
Order from LC or SLA mi$1.80, ph$1.80 59-19097

Trans. of Mekhanizatsiya Stroitel'stva (USSR) 1950 [v. 7] no. 3, p. 9-13.

Neyman, Ya. N.
RESULTS OF THE COMPETITION FOR THE BEST DESIGN OF CRANES FOR BUILDINGS OF FEW STOREYS, ARRANGED BY THE U. S. S. R. NATIONAL INSTITUTE FOR TECHNICAL EQUIPMENT, V. N. I. T. O. (K Itogam Konkurso V. N. I. T. O. Stroiteley na Luchshiye Konstruktsii Kranov dlya Maleotashnogo Stroitelstva) tr. by K. P. R. Ehrenberg. June 52 [9]p. 1 ref. Library Communication 589; TL 876; M204.
Order from LC or SLA mi$1.80, ph$1.80 59-19098

Trans. of Mekhanizatsiya Stroitel'stva (USSR) 1951, v. 8, no. 4, p. 18-21.

Osipov, P. I. and Mikhaylov, V. D.
THE PRODUCTION OF BUILDING PLANT (Proizvodstvo Stroitel'nykh Mashin) tr. by K. Simon. May 52 [11]p. Library Communication no. 628; TL 878; M206.
Order from LC or SLA mi$2.40, ph$3.30 59-19100

Trans. of Mekhanizatsiya Stroitel'stva (USSR) 1951, v. 8, no. 6, p. 24-28.

## Electrical and Electronic Engineering

AVTOMATYKA (USSR) 1958, NO. 4, P. 1-86 (Automatics). [1959] [9]p. SOV-102-58-4-(1-11)/11.
Order from OTS $0.50, $2.00/year PB 141 095T-4

Consists of abstracts in English.

*ELEKTRICHESTVO (USSR) 1959 (Electricity). [1959]
Order from OTS $0.80, $4.50/6 mo.
Foreign $1.05, $6.00/6 mo.

No. 8, p. 1-96, PB 141 098T-16
No. 9, p. 1-96, PB 141 098T-17

Consists of abstracts in English

IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY. ELEKTROMEKHANIKA (USSR) 1959, NO. 5, P. 3-117 (News of Institutes of Higher Learning, Electromechanics). [1959] 1v. SOV-144-59-5-(1-14)/14.
Order from OTS $0.80, $4.50/6 mo. PB 141 101T-6
Foreign $1.05, $6.00/6 mo.

Consists of abstracts in English.

RADIO COMMUNICATION CENTERS IN THE USSR: LISTED BY ADMINISTRATIVE-TERRITORIAL SUBDIVISION. 21 July 59 [18]p. 140 refs. AF 1255935.
Order from LC or SLA mi$2.40, ph$3.30 59-19727

Trans. from Soviet open sources 1949-59.

RÖHDE AND SCHWARZ REPORTS, 1957, NO. 9, P. 73-129. [1958] [228]p. 18 refs. F-TS-9446/V.
Order from LC or SLA mi$9.90, ph$34.80 59-14104

Trans. of Rohde und Schwarz Mitteilungen (West Germany) 1957, no. 9, p. 73-129.

Contents:
Measurement of radio jamming (radio interference) in the UHF range, by W. Poehlmann
The New International Standard of 50 and 70 ohms for the characteristic impedance of conductors and its consequences for the manufacturer and user of measuring instruments, by A. K.
Video wobbler for frequency range of from 500 kc to 10 mc with sideband-adapter (videoscope), by H. Lucius
Polydirectional antennas with phase excitation, by F. R. Huber and L. Thomanek
The EGA-type rotary noise analyzing-automat, by F. Unterholzner
Felz type frequency and time meter of high accuracy, by M. Klose
Newest developments in the field of antenna construction (Part I), by R. Greif
About several new measuring devices, Author unknown
The HS 591 video-transposer-portable transmitter, Author unknown

VESTNIK SVYAZI (USSR) 1959, NO. 10, P. 1-32 (Herald of Communications). [1959] 1v. SOV-111-59-10-(1-23)/23.
Order from OTS $0.60, $3.50/6 mo. PB 141 108T-20
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

Frungel, F. and Hands, G.
SIGNAL TRANSMISSION WITH LIGHT PULSES. [1959] 32p.
Order from ATS $47.50 ATS-80L33G

Trans. of Arch[iv der] El[ektrischen] Übertragung (West Germany) 1959, v. 13, no. 3, p. 121-131.

Kammerer, Gustav.
APPARATUS FOR AUTOMATIC PRODUCTION OF CONNECTING WIRES STRIPPED OF INSULATION AT BOTH ENDS, tr. by C. P. 25 Sep 59, 9p (4 figs. omitted) 3 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-19753

Trans. of German patent 1,001,367, cl. 21 c 7/04, appl. 26 Apr 54, announced 24 Jan 57 by Max Grundig, Fürth.

This invention is characterized by a pair of rolls receiving the wire to be stripped of insulation which are driven in common by one shaft, by elastic surfaces which are so arranged that the wire in the rotation of the rolls comes to lie between the latter and the surfaces and is set in rotary motion about its axis, and by unsharp heated parts along which the ends of the insulated wire are moved in rotary manner.

Lezerson, V. K. and Greybo, Z. F.
AN ARTIFICIAL TELEPHONE TRAFFIC MACHINE [Mashina Iskusstvennoy Telefonnoy Nagruzki]. [1959] 9p.
Order from ATS $15.95 ATS-21L35R

Trans. of *Elektrosvyaz' (USSR) 1959, v. 13, no. 2, p. 64-71.

Ouwehand, N.
A NEW TYPE OF TELEPHONE PAY STATION FOR LOCAL AND TOLL OPERATION. [1959] 15p.
Order from SLA mi$2.40, ph$3.30 59-17790

Trans. of Telegraaf en Telefoon (Netherlands) 1958 [v. 59] Apr/June, p. 19-28.

In view of progressing automation the firm of "Sodeco" together with the PTT of Holland has developed a telephone pay station intended for automatic local and toll operation. The amount owed (cost of call plus additional charge for booth) is paid by means of twopenny pieces and fivepenny pieces. During the call the talking party can always observe the amount of his balance. Further details are given in regard to the collecting and returning of the coins. The energy needed for the mechanical operation is taken from the power system. (Author)

## Mechanical Engineering

AIR PUMP FOR CONDENSER, tr. by J. C. Levy. 26 Aug 59, 5p. (2 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-19214

Trans. of French patent 561,787, gr. 5, cl. 2, appl. 3 Feb 23, granted 17 Aug 23, pub. 27 Oct 23, by Société Beaudrey et Bergeron, France.

This air pump is characterized by the existance of a distributor and a wheel so arranged that water admitted through the distributor is released by the wheel helicoidally about its axis into a convergent where it creates one or more stationary or moving eddies. The eddying motion created in the center of the convergent produces an almost absolute vacuum, thereby entraining the air to be evacuated. The water then traverses a divergent wherein the same helicoidal motion, under optimum efficiency, converts the maximum velocity existing at the constriction into pressure capable of evacuating the air and water to the atmosphere.

AKADEMIYA NAUK SSSR. OTDELENIYE TEKHNICHESKIKH NAUK. IZVESTIYA: ENERGETIKA I AVTOMATIKA, 1959, NO. 3, P. 3-192 (News of the Academy of Sciences of the USSR, Department of Technical Sciences, Power Engineering and Automation). [1959] 1v. SOV-24-59-3-(1-33)/33.
Order from OTS $1.00, $5.50/6 mo. PB 141 019T-19
Foreign $1.25, $7.00/6 mo.

Consists of abstracts in English.

DEVICE FOR OBTAINING RENEWAL OF THE AIR IN A WORK CYCLE EFFECTED BY MEANS OF A CELLULAR WHEEL, FOR THERMAL MACHINES SUCH AS GAS TURBINES, HEAT PUMPS, REFRIGERATING MACHINES ETC., FUNCTIONING WITH A GAS, tr. by J. C. Levy. 1 Sep 59, 10p. (10 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-19743

Trans. of French patent 876,601, gr. 5, cl. 3, appl. 5 Nov 41, granted 10 Aug 42, pub. 11 Nov 42 (Priority: Switzerland, 7 Dec 40) by Brown, Boveri & Cia., Switzerland.

The device is characterized in that the sweeping is divided into two phases, one of acceleration and one of retardation, in such manner that in the acceleration phase the air having been subjected to acceleration is moved across the cellular wheel, while in the retardation phase it continues in its progress due to the kinetic energy acquired by it in the acceleration phase. In the acceleration phase the air is accelerated and moved by means of a fan, while in the retardation phase it continues in its progress solely by virtue of the kinetic energy absorbed in the acceleration phase. The air that has been forced by means of a fan to pass through the acceleration phase is reunited at the delivery side of the fan with the air proceeding from the retardation phase. Replacement of the air is accomplished in cross cycle, the communications with the cellular wheel at the inlet and the outlet being interchanged in such manner that the outlet of the acceleration phase is directed to the inlet of the retardation phase, and vice versa, and such that the highest pressure prevails upstream of the cellular wheel in the acceleration phase, and downstream of said wheel in the retardation phase, thus permitting recuperation of the acceleration energy. Replacement of the air is accomplished in open circuit, the fresh air entering the retardation phase expelling from this phase the expanded air and bringing it, in following the cycle, to the acceleration phase where it expels from the system the expanded air reaching the cellular wheel. At the high pressure side, air from the supplementary compressor is employed to accelerate the air in the cells with the object of sweeping, after it has preliminarily traversed a heat exchanger.

TEPLOHNERGETIKA (USSR) 1959 [V. 6] NO. 10, P. 3-96 (Heat Power Engineering). [1959] 1v. SOV-96-59-10-(1-22)/22.
Order from OTS $0.70, $4.00/6 mo. PB 141 089T-20
Foreign $0.95, $5.50/6 mo.

Consists of abstracts in English.

WALL THICKNESS CALCULATION OF STEAM BOILERS AND PRESSURE VESSELS (Vereinigung der Technischen Uberwachungs-Vereine). 1959.
Order from BISI £2 10s. BISITS 1488

Trans. of Brennstoff-Wärme-Kraft (West Germany) 1951 [v. 3] Dec, p. 422-426.

Miropol'skiy, Z. L.
TEMPERATURE CONDITIONS OF THE METAL OF STEAM GENERATING SURFACES IN DIRECT FLOW CONTINUOUS COIL BOILERS (Temperaturnyy Rezhim Metalla Parogeneriruyushchikh Poverkhnostey Pryamotochnykh Kotlov). Oct 59 [15]p. 14 refs. RTS no. 1118.
Order from LC or SLA mi$2.40, ph$3.30 59-22590

Trans. of Teploenergetika (USSR) 1959 [v. 6] no. 3, p. 40-44.

The special characteristics of the temperature conditions of the metal of steam generating tubes in direct flow continuous coil boilers are discussed, and methods for calculating the wall temperatures, based on available experimental data, are examined. (Author)

Ratner, A. V. and Zelenskiy, V. G.
DETERMINATION OF STEAM HUMIDITY AT HIGH PRESSURES (Opredeleniye Vlazhnosti para pri Vysokikh Davleniyakh). Aug 59 [11]p. 2 refs. RTS no. 1082.
Order from LC or SLA mi$2.40, ph$3.30 59-19448

Trans. of Teploenergetika (USSR) 1958, v. 5, no. 5, p. 44-46.

Results are presented of research at the All-Union Power Engineering Institute on the coefficients of the consumption of the Venturi tube with water, water mixed with steam, and steam. A coil pipe installed in a tank was used to receive the hot water and wet steam. Super-heated steam was fed under very high pressure into the coil pipe and cooling water was fed into the tank. By regulating the consumption of the steam and the cooling water, hot water and steam of different parameters were obtained at the outlet of the coil pipe where a consumption meter tube had been set up in a vertical position. Wet steam was continually selected before the consumption meter tube at a distance of 300 mm from the nozzle in a quantity of ∿100 kg/hr. To measure the consumption of steam and cooling water before the steam cooler, ordinary diaphragms were set up on the intake pipes. The steam content of the wet steam was determined by the calorific balance on the steam cooler and the small heat exchanger. The coefficient of consumption of the consumption-meter tube in a vertical position was about 0.99 with cold and hot water, and with superheated wet steam (with a steam content of 0.065 to 0.65), at a pressure of 160 to 170 atm.

Sell, H.
GEAR PUMPS (Die Zahnradpumpen). [1959] [9]p. 12 refs.
Order from SLA mi$1.80, ph$1.80 59-20812

Trans. of Fördertechnik (Germany) 1935, v. 28 [no. 3/4] p. 31-34.

A survey.

## Ordnance, Missiles, and Satellite Vehicles

Apin, A. Ya. and Bobolev, V. K.
THE EFFECT OF PHYSICAL STRUCTURE AND STATE OF AGGREGATION ON THE SENSITIVITY OF EXPLOSIVES. [1959] 4p. 8 refs.
Order from LC or SLA mi$1.80, ph$1.80 AEC-tr-3781

Trans. of Zhur[nal] Fiz[icheskoy] Khim[ii] (USSR) 1946, v. 20, no. 11, p. 1367-1371.

Petrov, V. P.
ORIENTATION IN THE COSMOS (Orientatziya v Kosmose). [1959] [15]p. (8 figs. omitted). F-TS-9833/III.
Order from LC or SLA mi$2.40, ph$3.30 59-19524

Trans. of Nauka i Zhizn' (USSR) 1958 [v. 25] no. 9, p. 7-12.

Methods for orienting a satellite are discussed.

Tavernier, Paul and Napoly, Claude.
RATE OF COMBUSTION OF AN EXPLOSIVE CONTAINING NITROGUANIDINE AS A FUNCTION OF PRESSURE. May 59 [10]p. 1 ref. Picatinny Arsenal Trans. no. 35.
Order from LC or SLA mi$1.80, ph$1.80 59-18003

Trans. of Mémorial des Poudres (France) 1955, v. 37, p. 217-223.

The rate of combustion of an English type powder containing 55% nitroguanidine was studied under pressures ranging from 30 to 300 kg/sq cm. It was shown that between 0 and 180 kg/sq cm, the equation $V = \beta p^{\alpha}$ could be written with a pressure exponent, $\alpha$, ranging from 0.90 to 0.95. The temperature coefficient at constant pressure is remarkably low in this area of pressure.

Tavernier, Paul and Napoly, Claude.
THE RELATION BETWEEN THE EXPLOSION TEMPERATURE OF AN EXPLOSIVE AND ITS RATE OF COMBUSTION UNDER ROCKET PRESSURES. May 59, [10]p. 2 refs. Picatinny Arsenal Trans. no. 39.
Order from LC or SLA mi$1.80, ph$1.80 59-18004

Trans. of Mémorial des Poudres (France) 1955, v. 37, p. 331-338.

In the area of rocket pressures the formula log V = A + B (T/1000) is shown to reflect poorly the findings obtained for the rate of combustion of a colloidal explosive under given initial pressures and temperatures. Certain tables are given which make it possible to calculate results more precisely.

## Sanitation and Safety Engineering

U. S. S. R. LITERATURE ON AIR POLLUTION AND RELATED OCCUPATIONAL DISEASES, VOL. 1, selected, translated, arranged and prepared for photo-offsetting by B. S. Levine. Jan 60 [219]p.
Order from OTS $3.50 60-21049

The 38 translated articles presented here constitute the first of a projected 10-volume series which will contain more than 400 translations of Soviet literature on air pollution. The arrangement in the present volume is chronological within each of three categories: (1) general; (2) toxicity, effect on health and general living conditions; and (3) analytical. Twenty three of the 38 articles are from 1957 and 1958 scientific and technical journals, although the pioneer (1928) work of P. N. Lastochkin on methods and equipment for determining CO in air is also included. Other items include the foreword, the introduction, and the concluding chapter of professor V. A. Ryazanov's book, The Sanitary Protection of Atmospheric Air; a review of the book by professor M. S. Gol'dberg; The effect of atmospheric ultraviolet radiation insufficiency on mineral metabolism, by V. S. Senchuk; The effect of smoke emission purification on air dust concentration of a large city, by F. I. Dubrovskaya; The toxicity of $TiCl_4$, by E. A. Mel'nikova; Toxicity of dimethylformamide, by K. P. Lobanova; Effect of chronic lead poisoning on the immunological reaction of the organism, by B. A. Kiryachko; Chromatographic separation of benzene and isopropylbenzene and of benzene and chlorobenzyl in air analysis, by E. Sh. Gronsberg; Colorimetric method for the quantitative determination of methyl ester of methacrylic acid in the air of work shops, by N. L. Nemirovskii and G. I. Meerovich; Determination of simultaneously present phenol, cyclohexanone and cyclohexanol, by A. S. Maslenikov; Chromotropic acid method for the determination of formaldehyde in air, by Yu. N. Gladchikova and N. I. Shumarina. Determination of paraffin and ceresin aerosols in the air of industrial plants, by D. P. Senderikhina, and Determination of lead in the air by amperometric titration, by L. P. Grigorova. Every item is headed by the original title (in translation), the name of the author or authors, institutional affiliation, and the periodical or book from which the item was selected. (See also 59-21092, 59-21173 to 59-21175)

Leclerc, E. and Edeline, F.
TREATMENT OF THE POLLUTED WATER IN COAL WASHERIES. [1959] 27p. 13 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-18568

Trans. of Annales des Mines de Belgique, 1956, June, Spec. Issue, p. 102-108.

A lecture comparing the existing pollution of "the river" with the requirements of present and anticipated laws.

## FOOD, HANDLING, AND PACKAGING EQUIPMENT

### Food

Giolitti, G[iovanni].
BACTERICIDAL ACTION OF HYDROGEN PEROXIDE ON THE PRINCIPAL PATHOGENIC BACTERIA IN MILK. [1959] 6p. 6 refs.
Order from SLA mi$1.80, ph$1.80 60-10503

Trans. of Società Italiana delle Scienze Veterinarie. Atti, 1947, v. 1, p. 190-196.

Grau, R.
INFLUENCE OF THE INCORPORATION OF SALTS ON THE WATER ABSORPTION OF MEAT, tr. by P. M. M. 2 May 57, 12p.
Order from SLA mi$2.40, ph$3.30 60-10449

Trans. of Industr[ies] Agr[icoles] et Alim[entaires] (France) 1953, v. 70 [no. 9/10] p. 649-656.

The increase in binding powder by incorporation of chemical constituents produces a typical swelling of proteins which may be increased by using common salt in combination with other substances. The effect of phosphates is particularly strong, which is well known in the field of the biochemistry of proteins. The binding agents such as starch, skimmed milk powder and binding agents which contain pork rind have no influence on the swelling of meat fibers. The pH has no pronounced influence on the water binding capacity of meat even with incorporation of alkaline phosphates provided that they are used in small quantities. (Extracted from author's summary)

Kaufmann, H. P. and Thieme, J. G.
DETECTION OF THE REFINING OF LARD, tr. by P. M. M. 27 Oct 56, 19p. 34 refs.
Order from SLA mi$2.40, ph$3.30 60-10412

Trans. of Fette Seifen Anstrichmittel (West Germany) 1956, v. 58 [no. 8] p. 585-592.

The aniline point may be used for analytical purposes only with the greatest care as there are numerous factors which influence this magnitude. Especially, it is necessary to establish that the sample to be tested has a saponification number (S. N.) which corresponds to the approximate S. N. of 195 which is the basis of the formula used. A definite detection of the refining of lard is not possible by means of the aniline point, but in many cases the treatment of rancid or oxidized

lard with Fuller's earth may be recognized. The detection of the refining of oxidized lard is based on the fact that the treatment with Fuller's earth does destroy or remove the peroxides, but that the hydroxyl groups formed by oxidation, which lower the aniline point considerably, may still be present even after the treatment with Fuller's earth. To supplement the aniline point method the determination of the hydroxyl number (OHN) is recommended which requires experience, however. In doubtful cases it is necessary to ascertain whether or not the OH content may be removed by treatment with Fuller's earth. (Author)

Kaufmann, H. P.
ESSENTIAL FATTY ACIDS IN COMMERCIAL MARGARINE, tr. by P. M. M. 15 July 57, 4p. 20 refs.
Order from SLA mi$1.80, ph$1.80 60-10711

Trans. of Fette Seifen Anstrichmittel (West Germany) 1955, v. 57 [no. 6] p. 405-407.

The linoleic-acid content of 10 types of commercial margarine was found to vary between 3 and 14%. The upper limit is as good as that of olive oil and even the lower limit is sufficient with respect to nutritional physiology.

Keilling, J. and others.
CONCLUSIONS OF THE STUDY SYMPOSIUM CONCERNING THE PROBLEMS OF THE MILK ECONOMY (Conclusions du Cycle d'Etudes sur les Problèmes de l'Economie Laitière) [1959] [18]p.
Order from SLA mi$2.40, ph$3.30 59-20871

Trans. of Economie Rurale (France) 1956, no. 27, p. 159-164.

Morvillez, F., Balâtra, P. and Pujo, L.
RANCIDITY OF HOG LARD. I. NORMAL DEVELOPMENT. [1959] 8p. (refs. omitted)
Order from SLA mi$1.80, ph$1.80 60-10605

Trans. of J[ournal de] Pharm[acie] et de] Chim[ie] (France) 1939 [ser. 8] v. 29 [pt. 1] p. 159-166.

Morvillez, F., Balâtre, P. and Pujo, L.
RANCIDITY OF HOG LARD. II. EXPERIMENTAL PRODUCTION OF RANCIDITY. [1959] 7p. 5 refs.
Order from SLA mi$1.80, ph$1.80 60-10604

Trans. of J[ournal de] Pharm[acie et de] Chim[ie] (France) 1939 [ser. 8] v. 29 [pt. 1] p. 167-175.

Nai, D. D. and Giolotti, G[iovanni]
RECOMMENDATION OF A NEW METHOD FOR THE PURIFICATION OF MILK, tr. by P. M. M. [1959] 5p. 7 refs.
Order from SLA mi$1.80, ph$1.80 60-10502

Trans. of Società Italiana delle Scienze Veterinarie. Atti, 1947, v. 1, p. 197-203.

Sedlmeier, H. and Kotter, L.
THE PROS AND CONS OF THE USE OF PHOSPHATES IN THE MANUFACTURE OF SAUSAGE, tr. by P. M. M. 3 Feb 58, 7p. 32 refs.
Order from SLA mi$1.80, ph$1.80 60-10143

Trans. of Vieh- und Fleischwirtschaft (West Germany) 1951 [v. 1] no. 22, p. 9-11.

## MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

AVTOMOBIL'NAYA PROMYSHLENNOST (USSR) 1959, NO. 7, P. 1-48 (Automobile Industry). [1959] 1v. SOV-113-59-7-(1-19)/19.
Order from OTS $0.50, $3.00/6 mo. PB 141 110T-17
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

USSR INDUSTRIAL EQUIPMENT (TRANSPORTATION, CONSTRUCTION, PRODUCTION, AND POWER MACHINERY) [NO. 16, 1 DEC 59]. [1959] [26]p. 59 refs.
Order from LC or SLA mi$2.70, ph$4.80 60-13055

Trans. of unevaluated information selected from Russian-language publications.

Contents:
Transportation equipment: Automotive industry
General
Moscow City Sovnarkhoz
Motor vehicle and plant information
Spare parts
Motorcycles and special vehicles
Bearings
Machine tool industry
Automation and mechanization
Plant specialization and organization
Other plant information
Automatic lines and automatics
Other machine tools
Electrical machinery
Motors and generators
Other electrical products
(See also 59-22265)

Bazhanov, N. S.
WELDING REPAIRS TO LARGE MOTORS ON ROLLING MILLS (Svarka pri Remonte Krupnykh Elektrodvigateley Prokatnykh Stanov). Oct 59 [9]p. RTS no. 1205.
Order from LC or SLA mi$1.80, ph$1.80 59-22596

Trans. of Svarochnoye Proizvodstvo (USSR) 1958. no. 10, p. 35-37.

Cracks should be welded in the early stage of their development. If a machine is kept in further service

the cracks which have already developed will grow, and new ones will appear. The preparation of the defective parts, depending on conditions, can be done not only by mechanical means (a drill or punch) but by the use of a flame with the subsequent treatment of the edges with a chisel. Welding repairs of the metal structure of heavy electrical equipment installed in rolling mills can be carried out without taking down the machine. The correct preparation and organization of welding operations will reduce the stoppage of rolling mill plant. Highly qualified welders, who have experience in the repair of heavy equipment, should be employed on this welding work. (Author's conclusions)

Fedorov, V. S., Zenkov, F. D., and Dudin, V. F.
RELATIONSHIP BETWEEN ROTATIONAL SPEED AND WEIGHT ON BIT IN TURBODRILLING PROVIDING EFFICIENT ROCK DISINTEGRATION [Zavisimost' Mezhdu Chislom Oborotov i Osevoy Nagruzkoy pri Turbinnom Burenii, Obespechivayushchey Effektivnoye Razrusheniye Gornykh Porod] [1959] 3p.
Order from ATS $5.00 ATS-42L34R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zaved[eniy]. Neft' i Gaz (USSR) 1959, no. 3, p. 39-41.

Godzhayev, S. B.
SLIM BITS. [1959] 8p.
Order from ATS $8.85 ATS-88L35R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zaved[eniy]. Neft' i Gaz (USSR) 1959, v. 2, no. 5, p. 75-78.

Grindatto, Giuseppe and Zoppo, Olga.
PORTABLE MORTISING MACHINE FOR WORKING WOOD, tr. by C. P. 26 Oct 59, 10p. (5 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-22283

Trans. of Italian patent 494489, cl. IV, appl. 3 Dec 52, granted 25 May 54, printed May 55.

The present invention has for object a portable mortising machine particularly adapted to the shaping of cornices, recesses for sculpture, hollows for marquetry work, also for series working of notches in the uprights of blinds, both of the Piedmontese type, that is, with the notch all the way through, as well as of the American type, that is with the notch closed at both ends. The machine is characterized in that it is essentially constituted by an annular base with two lateral handgrips for manipulation, a high speed electric motor for direct drive of the tool mounted on a shaft vertical to said base, a device for regulating the depth of cut, a frontal handgrip with circuit-breaker for controlling the motor, and two supports with pressure screws disposed symmetrically with respect to the lateral manipulating handgrips. The guide base for the machine is characterized in that it is essentially constituted by a small metal plate the lower surface of which is smooth and perfectly flat and the upper surface of which has two smooth rectangular strips on which rests the annular base of the mortising machine, and two supports from which extend two calibrated parallel bars which are introduced into corresponding holes in the supports with pressure screws of the mortising machine. The small guide square is characterized in that it is constituted by a prismatic metal block with a guide tongue below intended to slide in a corresponding notch already made in a wooden upright in working for the purpose of insuring the perfect parallelism between each new notch and the preceding one.

Gross, Charles-Louis.
IMPROVEMENTS IN MACHINE TOOLS WITH ALTERNATING RECTILINEAR MOVEMENT, tr. by C. P. 8 Oct 59, 9p. (4 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-22273

Trans. of French patent 560035, cl. V-4, appl. 19 Dec 22, granted 28 June 23, pub. 26 Sep 23.

The present invention has for purpose rendering unnecessary the integration of the piece to be machined with the frame of the machine. The improvements are characterized in that the machine has an even number of tools, each actuated with parallel, alternating rectilinear movements, of the same period and amplitude. The movements of two consecutive tools are, however, offset with respect to one another by a fraction of a period equal to 1/n, n being any submultiple, preferably even, of the number of tools. The tools are disposed in such a way that the working strokes of the tools, the movements of which are offset by a half-period, take place simultaneously. In this way the motive forces which are exerted on the different tools during their working stroke are equal and opposite in direction; the reactions produced on the frame are therefore also equal and opposite in direction, and consequently are mutually balanced. It is therefore no longer necessary to render integral the piece to be machined and the frame.

Kümper, August and Happe, Heinrich.
SAW WITH CURVED HEAD FOR MAKING CIRCULAR ARC-SHAPED CUTS IN A COAL-SEAM, tr. by C. P. 2 Oct 59, 2p. (2 figs. omitted) 1 ref.
Order from LC or SLA mi$1.80, ph$1.80 59-22279

Trans. of German patent 151541, cl. 5 b, pat. 21 Apr 03, pub. 16 May 04.

The saw, which is to be moved to-and-fro in a circular arc by means of a lever oscillating about a screw column or the like, features cross-cut teeth not only on its curved head but also on its straight side edges and, if necessary, on the edges of its openings. Jamming of the saw while in use is prevented since the lateral teeth expand the cut and the larger pieces of coal coming within range of the stroke of the saw are continually cut up. With saws of this type cuts to a depth of 3 m can be made which was not possible with the saws hitherto known.

Varganov, S. A.
DETERMINING THE EFFICIENT PERFORMANCE OF SELF-PROPELLED VIBRATING ROLLERS (Ustanovleniye Ratsional'nykh Rezhimov Raboty

Samokhodnykh Vibrokatkov) tr. by G. T. Cranford. Mar 59 [9]p. Library Communication no. 728; M515. Order from LC or SLA mi$1.80, ph$1.80 59-22563

Trans. fo Stroi[tel'noye] i Dorozh[noye] Mashinostro[yeniye] (USSR) 1958, v. 3, no. 10, p. 13-17.

Vibrating rollers provide the required compaction of rolled asphalt (with a preliminary rolling of 5 passes and the vibrator switched off) for the following number of passes; road roller D-317, 3 passes; road roller SW of the firm ABG, 6 passes; road roller DM-85, 12 passes. Operation of vibrating roller D-317 with a vibrating roll weighing 1000 kg is most effective with the following parameters: vibration frequency, 3000-4000/min; dynamic force with an intensity of 6000 kg; speed, 1.5 km/h; temperature of mix, 110°C. The effectiveness of the compaction depends not only on the value of the dynamic force and vibration frequency but also on the ratio of the dynamic force to the overall load of the vibrating wheel on the compacted material. Vibrating roller D-137, where the ratio of dynamic force to the weight of vibrating roll equals 6, is considerably more effective than the vibrating roller SW, in which this ratio does not exceed 3.5. The tests gave no definite information on the relative effectiveness of rotary and vertical vibrations. In vibrating rollers it is expedient to employ rotary vibrations and to have the construction as simple as possible. Vibrating rollers give 3 to 4 times the output of non-vibrating rollers and use less power and less metal. Both the 3-wheel and 2-wheel rollers are efficient. The 3-wheel roller has good stability and high output but the 2-wheel roller has a bias. Therefore the 3-axle vibrating rollers should be used for heavy construction and 2-axle vibrating rollers for light construction work and for maintenance of road surfacings. (Author's conclusions)

## Engines and Propulsion Systems

Amel'yanchik, A. V.
COMPUTER CALCULATION OF THE STRENGTH OF TURBINE DISCS. [1959] 9p.
Order from ATS $11.50 ATS-76L35R

Trans. of Akad[emiya] Nauk SSSR. Otdel[eniye] Tekh[nicheskikh] Nauk. Izvest[iya]: Mekhanika [i Mashinostroyeniye, 1959, no. 1, p. 138-143.

Granclaude, Paul.
IMPROVEMENTS MADE IN SYSTEMS OF ELECTRIC IGNITION BY SPARK PLUGS OF INTERNAL COMBUSTION ENGINES, tr. by C. P. 19-Oct 59, 8p. (9 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-22274

Trans. of French patent 598330, cl. V-8, appl. 16 May 25, granted 26 Sep 25, pub. 14 Dec 25. (appl. filed in Belgium 16 May 24).

The improvements consist principally in combining with the ignition systems means of short-circuiting the electrodes of each of their spark plugs and in interrupting this short-circuiting at the very time (and during this time only) when this spark plug is to produce the ignition.

Livshits, P. Yu. and Koganer, V. E.
SYSTEM FOR THE ELECTRONIC CONTROL OF FUEL INJECTION (Sistema Elektronnogo Upravleniya Vpryskom Topliva). Oct 59 [13]p. RTS no. 1109.
Order from LC or SLA mi$2.40, ph$3.30 59-22589

Trans. of Avtomobil'naya Promyshlennost' (USSR) 1958, no. 10, p. 12-15.

In the Tsentralnoe Konstruktorskoe Byuro Toplivnoy Apparatury (Central Bureau for the design of Fuel Supply Equipment), a system has been worked out for the electronic control of fuel injection into the engine. This system comprises an accumulator and an interrupter, which imparts electric current impulses of the necessary frequency, at the instant corresponding to the commencement of ignition, to a mono-stable multivibrator, (Kipp-relay), which forms electrical pulses of the correct duration initiated by signals from transmitting elements. The pulses are amplified and passed through a distributor into electromagnetic injectors. Each of the latter, on receiving a current impulse of the correct duration, opens the injector valve for the period corresponding to the duration of impulse received, and in this way injects the correct amount of fuel into the cylinder. The application of electric current impulses, free from distortion due to electrical inertia effects, considerably increases the accuracy by which the composition of the fuel mixture can be controlled, with reference to the operative conditions required. (Author)

## Machine Parts and Mechanisms

DEVICE INTENDED TO AMPLIFY ON VEHICLES THE SOUNDS EMITTED BY THE WARNING DEVICES OF OTHER VEHICLES, tr. by C. P. 9 Oct 59, 4p. (4 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-22275

Trans. of French patent 758829, gr. 12, cl. 2, appl. 17 Oct 32, granted 7 Nov 33, pub. 24 Jan 34, by Société Anonyme des Etablissements Repusseau & Cie, France.

The device comprises, in combination, a microphonic receiver, an amplifier for the current received and a loud-speaker device subjected to the action of the amplified current. The amplifying device is constituted by an ordinary bi-grid tube, the plate and filament currents being taken from the usual storage battery of the vehicle.

TRANSPORTATION, COMMUNICATIONS, AND ELECTRIC POWER IN THE USSR [NO. 22, 1 DEC 59]. [1959] [78]p. 72 refs.
Order from LC or SLA mi$4.50, ph$12.30 60-13054

Trans. of unevaluated information selected from Russian-language publications.

Contents:
Highlights
General transportation
Railroad transportation
  General operations
  Individual railroad systems
  Electrification
  Construction and installation
  Rolling stock
Maritime shipping
  Port operations
  Northern-Sea route
  Vessels added
  Shipbuilding
  Fishing fleet
River shipping
  General operations
  Shipbuilding
Other transportation
  Civil air fleet
  Motor transport
Communications
  General (USSR communications facilities, Union Republic communications facilities, Radio relay lines, and Line operations)
  Radio
  Telephone and telegraph
  Television
  Postal communications
Electric Power (Interrepublic and Interregional Transmission Lines)
(See also 59-19760, 59-22186, 60-13155)

Ferroni, V. K.
INVESTIGATION OF BEARINGS (Issledovaniye Podpyatnikov). 3 June 57 [32]p. 6 refs. (foreign text included) M-V. Trans. no. 2297; M. 14.
Order from LC or SLA mi$3.00, ph$6.30 59-18637

Trans. of Elektrosila (USSR) 1956, no. 14, p. 52-64.

Löwy, Robert.
THROTTLE VALVE WITH SPHERICAL HOUSING AND TUBULAR PACKING, tr. by C. P. 5 Sep 59, 3p. (4 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-22271

Trans. of Austrian patent 151541, cl. 47 g, appl. 14 Apr 36, pat. 15 July 37, pub. 25 Nov 37.

The throttle valve with spherical housing and tubular packing is characterized in that the packing tube is arranged unilaterally on a plane parallel to the central plane of the valve or almost parallel thereto. The central plane of the packing tube is located in a slightly curved cylindrical surface, the generatrix of which lies parallel to the stem of the valve, in which case the surface follows as closely as possible the form of the valve but on one side goes around the stem of the valve.

## Manufacturing Equipment and Processes

*AVTOMATICHESKAYA SVARKA (USSR) 1959 [VOL. 12] NO. 10, P. 3-95 (Automatic Welding). [1959] 1v. SOV-125-59-10-(1-16)/16.
Order from OTS $0.50, $3.00/6 mo. PB 141 125T-21
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

MACHINING BY ELECTRIC SPARK. [1959] [43]p. 16 refs. F-TS-9244/V.
Order from LC or SLA mi$3.30, ph$7.80 59-18098

Trans. of extract from l'Usine Nouvelle, 1955, Spring issue.

A survey.

*SVAROCHNOYE PROIZVODSTVO (USSR) 1959, NO. 8, P. 1-48 (Welding Practices). [1959] 1v. SOV-135-59-8-(1-24)/24.
Order from OTS $0.50, $3.00/6 mo. PB 141 138T-20
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

USSR ELECTRONIC AND PRECISION EQUIPMENT [NO. 16, 8 DEC 59]. [1959] [32]p. 67 refs.
Order from LC or SLA mi$3.00, ph$6.30 60-13069

Trans. of unevaluated information selected from Russian-language publications.

Contents:
Problems of automation
Local production and organization
  Moscow City Sovnarkhoz
  Moscow Oblast Sovnarkhoz
  Moldavian SSR
  Estonian SSR
  Kirgiz SSR
Electronic equipment
  Prices
  Bulbs and tubes
  Components
  Radios
  Television equipment
  Communications apparatus
  Mine direction finder
Computers
Instruments
  Electrical instruments
  Instruments for chemicals and gases
  Manometers
  Level gauges
  Furnace control instruments
  Remote-control equipment
  Miscellaneous instruments and apparatus

Electrical products
Rotating machinery
Batteries
Insulators
(See also 59-18400, 59-22 409)

USSR MATERIALS AND MATERIALS PROCESSING EQUIPMENT [NO. 15, 27 NOV 59]. [1959] [60]p. 121 refs.
Order from LC or SLA mi$3.60, ph$9.30 60-13033

Trans. of unevaluated information selected from Russian-language publications.

Contents:
Items of special interest
Oil-field fire
Chemical industry
Regional roundups (Estonian SSR and Ukrainian SSR)
Rubber and rubber products
Synthetic and artificial products
Other chemicals
Chemical machinery
Petroleum and gas industries
Production and organization
Deposits, prospecting, and exploration
Transport and storage
Refining
Drilling machinery
Coal
Production and organization
Construction and expansion
Technology
Reserves and deposits
(See also 59-19273, 59-19685, 59-22083)

Agte, C[urt] and Becker, K[arl].
THE DISPERSION HARDENING OF COLD-WORKED MIXED-CRYSTAL WIRE. [1959] 7p. (2 figs. omitted) 16 refs.
Order from SLA mi$1.80, ph$1.80 60-10306

Trans. of Zeit[schrift] f[ür] Tech[nische] Physik (Germany) 1930, v. 11, no. 4, p. 107-111.

In the case of drawn W- wires where there have been small admixtures of Mo and Ta forming mixed crystals, the cleavage of the $K_\alpha$ Dublett, the tensile strength, the specific electrical resistance and the temperature coefficient of the electrical resistance were determined in relation to the annealing temperature, and it was found that the dispersion hardening (tempering ?) temperatures determined by X-ray examination and those determined mechanically practically coincided. The specific electrical resistance begins to fall off, on the other hand, at lower temperatures than that corresponding to the dispersion hardening temperature. The latter temperature is higher, the greater the addition of the other substance to the W, and the more the lattice parameter is modified thereby. The Mathiessen law is approximately fulfilled; in the case of the strengthened mixed-crystal wires there are slight systematic deviations. (Author)

Benzing, Alfred.
WIRE DRAWING DIE CONSISTING OF A PRECIOUS STONE, E. G., DIAMOND, WITH A HOLDER COMPRIZING A STEEL PLATE PROVIDED WITH AN AUXILIARY METAL INSERT, tr. by P. C. C. 6 Oct 59, 4p. (2 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-22281

Trans. of German patent 1,012,580, cl. 7b, gr. 4/10 (add. to German patent 822,968, pub. 29 Nov 51) filed 18 July 56, pub. 25 July 57, by Patent-Treuhand-Gesellschaft für Elektrische Glühlampen m. b. H.

The holder is provided with one radial observation channel, or with two such channels arranged along one axis, preferably perpendicularly to the drawing axis, and extending to the diamond. In the area of the observation channel the diamond is ground to a plane perpendicularly to the axis of said channel. Such a channel permits observing the diamond inside the holder perpendicularly to the direction of drawing, said diamond being illuminated either along the drawing axis or through the opposite portion of the channel. The risky removal of the diamond from the holder in order to detect wear defects is therefore eliminated. The observation channel is in the form of a groove and passes through the casing surface and the surface of the steel plate. The observation channel is therefore so widely open toward the outside that it can be easily cleaned. In a drawing die mounted according to the invention the field of vision is also larger, so that even dies having entirely unsymmetrical shapes, and therefore unilateral windows, can be observed.

Beutel, Heinz.
METHODS AND PRACTICE APPLIED IN SECURELY JOINING CARBIDE METAL AND STEEL FOR THE MANUFACTURE OF COMPOSITE TOOLS. [1959] [20]p. (16 figs. omitted) 8 refs.
Order from SLA mi$2.40, ph$3.30 60-10229

Trans. of pub. of International Mechanical Engineering Congress (no. 5) Essen. Class 12.

The methods discussed include brazing, plastic bonding, shrinking, press-fitting, press-forging, and the use of fixed mechanical joints. Requirements concerning the brazing process are presented with information on the use of fluxes and reducing gases, mechanical properties of the materials used, and the means of preventing cracking caused by residual stresses. Additional data is provided on single-face brazing and allied techniques.

Böhrs, Hermann.
BEDAUX SYSTEM AND TIME STUDY. [1959] 4p. 6 refs.
Order from SLA mi$1.80, ph$1.80 59-20491

Trans. of Maschinenbau (Germany) 1939 [v. 18, no. 1/2] p. 27-28.

Bramesfeld, E. and Scheuer, W.
THE CORRECT ESTIMATION OF WORKING TIMES. [1959] 7p. (1 fig. omitted) 5 refs.
Order from SLA mi$1.80, ph$1.80 59-20492

Trans. of Maschinenbau (Germany) 1937 [v. 16, no. 9/10] p. 237-239.

Charnak, V. S.
SOLDERING WITH SOLDERS CONTAINING SMALL AMOUNTS OF TIN. [1959] [7]p. 1 ref.
Order from LC mi$1.80, ph$1.80 60-10705

Trans. of Mashinostroitel' (USSR) 1938 [no. 1] p. 44-45.

Frumin, I. I.
THE MECHANISM OF FORMATION OF CRYSTALLIZATION CRACKS DURING WELDING AND DEPOSITION OF BEADS. [1959] 14p.
Order from ATS $19.95 ATS-22L36R

Trans. of Avtomat[icheskaya] Svarka (USSR) 1957 [v. 10] no. 1(52) p. 88-102.

Goldmann, Felix.
STAMPING-TECHNIQUE AND RESISTANCE-WELDING. [1959] 5p. 9 refs.
Order from SLA mi$1.80, ph$1.80 59-20494

Partial trans. (p. 490-492) of Maschinenbau (Germany) 1931, v. 10, no. 15, p. 489-492.

Heise, Kurt.
ARRANGEMENT FOR POSITIONING HARD METAL CHISELS FOR CIRCULAR GRINDING OF THEIR CUTTING POINTS OR CUTTING EDGES, tr. by C. P. 18 Aug 59, 5p. (3 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-19224

Trans. of German patent 851612, cl. 67a, gr. 5, pat. 3 Jan 51, pub. 6 Oct 52, by Gebr. Eickhoff Maschinenfabrik und Eisengiesserei m. b. H.

The arrangement is characterized in that two horizontal stops (positioning pins), adjustable in their longitudinal axis, are directed somewhat radially with reference to the pivoting axis of the rotary plate. The supports are uniformly secured with holders at the same angles with respect to the longitudinal median plane of the hard metal chisel. These angles are supplemented with the half wedge angle between the chisel edges, meeting at the point to be rounded off, to form a right angle in each case.

Homma, Masao and Shigihara, Michio.
STUDIES ON THE RELATION BETWEEN CAST IRON AND OXYGEN: THE EFFECT OF OXYGEN ON VARIOUS PROPERTIES OF CAST IRON. [1959] 13p. (7 figs. omitted) 20 refs.
Order from SLA mi$2.40, ph$3.30 60-10032

Trans. of [Nihon] Kinzoku Gakkai-Shi (Japan) 1952, v. 16 [no. 11] p. 607-610.

Experiments are described which show that (1) any change from the ordinary oxygen content of flake graphite cast iron will increase the chill effect of castings, (2) the ratio of combined carbon to graphitic carbon is decreased when the oxygen content is decreased, and (3) the graphitization velocity of white cast iron is increased with a decrease in the oxygen content. The oxygen content was also shown to be an important factor in considering the effect a specimen's thickness will have on the structure of cast iron. The thickness factor is shown to be greater for specimens having higher oxygen contents.

Katz, A[lfred] A[lexander].
DETERMINATION OF THE ECONOMIC LOT SIZES IN SERIES PRODUCTION. [1959] 7p. (7 figs. equations omitted) 7 refs.
Order from SLA mi$1.80, ph$1.80 59-20496

Trans. of Maschinenbau (Germany) 1931, v. 10, no. 2, p. 33-36.

In the determination of the economic lot sizes for assembled products which are manufactured by series production, the amount of capital tied up during the manufacturing period is the determining factor. By means of a graphic method which is proven analytically, a simple algebraic formula may be obtained for the determination of the capital invested. By means of this formula, a functional relationship can be set up in the form of an equation representing the unit costs in relation to the lot size, the minimum of which can be determined analytically. The separate factors of the final formula for the economic lot size are studied, and from them, the economic principles are formulated for the preliminary work and for the application of the lot size computation. (Author)

Kislyuk, F. I., Gorbanskiy, V. V., and Khudyshev, A. F.
PRECISION AUTOMATIC ARC WELDING WITH A NON-CONSUMABLE ELECTRODE IN A HYDROGEN MEDIUM (Pretsizionnaya Avtomaticheskaya Dugovaya Svarka Neplavyashchimsya Elektrodom v Srede Vodoroda). Oct 59 [8]p. (4 figs. omitted). RTS no. 1199.
Order from LC or SLA mi$1.80, ph$1.80 59-22252

Trans. of Svarochnoye Proizvodstvo (USSR) 1958, no. 10, p. 26-29.

A description is given of the equipment developed and the technique for automatic arc welding of workpieces of different metals and alloys with non-consumable electrode in a hydrogen medium.

Konopicky, Kamillo.
METHOD OF CONSTRUCTING INDUSTRIAL FURNACES, tr. by C. P. 13 Oct 59, 4p.
Order from LC or SLA mi$1.80, ph$1.80 59-22270

Trans. of Austrian patent 185832, cl. 18 b, 14, appl. 4 Oct 52, pat. 15 Sep 55, pub. 11 June 56.

The proposal is characterized by the use of prepared masonry elements which are composed of individual basic bricks and metal strips (sheet strips) laid between these. The elements are clamped together with the aid of metal bands (steel or iron bands). For such masonrywork both calcined, slightly calcined as well as uncalcined or uncalcined chemically bonded bricks may be used.

Krause, Richard.
METHOD OF CASTING HIGH MELTING-POINT METAL, E. G., IRON, NICKEL ALLOYS, AND THE LIKE AROUND DRAWING DIES, THE DIE BEING HELD IN PLACE BETWEEN METALLIC HOLDERS AND HOLDER TUBES ARRANGED IN THE AXIAL DIRECTION THEREOF, tr. by P. C. C. 5 Oct 59, 6p. (9 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-22280

Trans. of German patent 259,929, cl. 49i, gr. 6, pat. 22 Dec 11, pub. 14 May 13.

According to the present invention the perforated diamond is held preferably in a horizontal casting mold, not between solid rods, but between tubes which engage at a slight angle as deep as possible the preliminary orifice of the die, so that the hole is extended or continued by said tubes. This arrangement provides air circulation through the die, which circulation can still be increased in order to effect a more powerful cooling of the die and of the tubes themselves during and after casting by suction or compression. The heat dissipation and cooling due to this circulation through the die and the tubes is so effective that the hole is not damaged by heat, and even thin tubes resist it while even heavy tubes melt or weld without the described cooling. The hole is kept open and later can be widened as much as required by reaming without damaging the die edges. Any suitable more or less meltable metal can be utilized in accordance with the strength of the tubes. In the case of thin tubes which weld with the cast metal iron or the same metal as the cast metal are preferably selected. The tubes can also be made of more easily meltable metal, e. g., brass or bronze, since they are protected against melting by the air circulation. If these tubes are a little thicker or if thin tubes are provided with larger base plates made of such materials, the tubes can be cast on the front of the holder plate. The steel casing is therefore protected in the area of the hole against attack by the corrosive acids which may be used during the wire drawing operations.

Medovar, B. U. and Gurevich, S. M.
OXYGEN-FREE FLUXES FOR WELDING HIGH-ALLOY STEELS AND ALLOYS. [1959].
Order from BISI £4s. BISITS 1335

Trans. of Avtom[aticheskaya] Svarka (USSR) 1955 [v. 8] no. 4, p. 31-41.

Morinaga, T. and Takakashi, T.
ON THE STUDY OF ALUMINUM SLABS BY SUPERSONIC FAULT DETECTION. [1959] 10p.
Order from MDF $5.00 MDF M-122

Trans. of [Imono] (Japan) 1957, v. 29, no. 7, p. 508-514.

Factors affecting the casting process have been determined on aluminum slabs by using supersonic fault detection. It is possible to indicate the size of faults by using the multiple reflection method for a certain apparent receiver sensitivity and the frequency of the supersonic fault detector. Faults of comparatively large size, like cracks, oxide inclusions and gas bubbles can be detected by measuring the change in the echo by the single reflection method. The distribution of the blisters, examined by the fracture test, agreed qualitatively with the result of supersonic fault detection. According to the relation between the results from supersonic fault detection and the distribution of blisters on the same slabs after rolling and annealing, it can be said that the location of large blisters will be predicted well but the prediction of small blisters will be indefinite. (Author)

Ravier, F.
ON THE MANUFACTURE OF SYNTHETIC GEM STONES. Sep 59, 22p.
Order from SLA mi$2.70, ph$4.80 60-10315

Trans. of Chimie et Industrie (France) 1934, v. 31, no. 5, p. 1031-1039.

Processes with which the fire and luster of natural stones are faithfully reproduced in scientific gem stones are traced. First, the methods used to obtain pure, crystallized alumina, the basic material for all synthetic gems, are presented. The production of this raw material from the calcination of ammonium alum, its subsequent mixing with dyes, and the progressive melting procedures are then described. Formulas for preparing the most common varieties of synthetic stones are presented with numerous "tricks-of-the-trade".

## MATERIALS

Czernin, W.
PHYSICAL PROPERTIES OF THE PRODUCTS OF (CEMENT) HYDRATION. [1959] 15p. 21 refs.
Order from SLA mi$2.40, ph$3.30 60-10578

Trans. of Zement und Beton (Austria) 1959, no. 16, p. 10-15.

A survey lecture.

Czernin, W.
TESTS ON THE REACTIVITY OF GEL WATER. [1959] 4p.
Order from SLA mi$1.80, ph$1.80 60-10580

Trans. of Zement u[nd] Beton (Austria) 1959, no. 16, p. 35-36.

A lecture reporting on tests to determine whether and to what extent it is possible to produce complete hydration if the available water is lower than that corresponding to a water-cement ratio of about 0.4. The tests confirm Powers' assumptions on "non-reactive gel water".

Friedrich, M.
EXTINGUISHING EXPERIMENTS ON BURNING PAINT WITH HALOGENATED HYDROCARBONS, 8 Dec 59, 6p. (1 fig. omitted).
Order from SLA mi$1.80, ph$1.80 60-10528

Trans. of Farbe u[nd] Lack (West Germany) 1959, v. 65, no. 5, p. 241-243.

Burning paint was extinguished with halogenated hydrocarbons. Iodine compounds and chlorobromo methane had the best extinguishing effect, followed by bromo- and chloro-compounds. Sprayed water had the poorest effect. The extinguishing times adjusted to the volatile constituents of the paints, which in paint loss by burning are just passing over from the liquid phase into the flame. Such extinguishing agents are only suitable for relatively small fires, however, because in fire-fighting they partially produce decomposition products which are very toxic to humans. These agents must not be used in small, unventilated rooms.

Gille, F., Czernin, W., and others.
ELECTRON MICROSCOPE STUDIES OF HYDRATED CEMENTS. [1959] 15p. (41 figs. omitted) 13 refs.
Order from SLA mi$2.40, ph$3.30 60-10581

Trans. of Zement und Beton (Austria) 1959, no. 16, p. 21-24.

Broken surfaces and polished sections of hardened neat cements prepared with methacryl acid ester were exposed at the Rhein.-Westfälische Institute for Electron Microscopy to $SiO_2$ vapor at an angle and were photographed with an electron microscope with a magnification between 7000 and 16,000 diameters. Calcium hydroxide crystals revealed very distinctly a cleavage of broken surfaces of hardened cement parallel to the base. Among the other components one could recognize indications of prismatic crystals, but their occurrence was not definitely established. The main mass of a normal cement paste did not permit identification of clearly recognizable crystal aggregations with given magnification. A somewhat pitted appearance was sometimes observed; indications of prisms were found in these pitted areas. Prisms could sometimes be clearly identified in steam cured specimens. Normally hardened cement permits identification (with the magnification used) of a pore system, whose smallest, still clearly recognizable pores have a diameter of about 0.03$\mu$. The pores have a different appearance when the plastic substance is stripped off the hardened cement or when the cement is dissolved to obtain replicas. In stripping parts of the plastic which have partially penetrated into the pores are drawn into an elongated shape. The larger pores thus have definitely wedge-shaped replicas. Pores in replicas of dissolved cement have less elongated shapes and their replicas are correspondingly smaller.

Goebel, E[rnst].
GLUE AND GELATIN. III. THE INFLUENCE OF HYDROGEN ION CONCENTRATION ON THE QUALITY OF GLUE DURING THE RENDERING PROCESS. [1959] 13p. 3 refs.
Order from SLA mi$2.40, ph$3.30 60-10592

Trans. in manuscript of Farben-Z[ei]t[un]g (Germany) 1930, v. 35 [no. 20] p. 1019-1022.

Gorenbeyn, V. Ya.
INVESTIGATION OF THE ABRASION RESISTANCE OF CONCRETE REVETMENT OF HYDRAULIC STRUCTURES (Issledovaniye Oblitsovochnykh Gidrotekhnicheskikh Betonov na Iznos) tr. by G. N. Gibson. June 59 [7]p. LC 898.
Order from LC or SLA mi$1.80, ph$1.80 59-19285

Trans. of Beton i Zhelezobeton (USSR) 1957, no. 10, p. 413-415.

A special device subjected the surfaces of concrete specimens to a strong flow of water containing suspended coarse quartz sand and pebbles. The eight concrete mixes tested were made with Rion gravel, Rion crushed rock, crushed dolerite, or granite aggregate. The loss of weight from one square meter of the abraded specimen in one hour was used as a measure of the abrasion. Results show that the intensity of abrasion decreases with time and that a change in the strength of the concrete, the strength and grading of the aggregate, the proportions of aggregate and cement, or the water/cement ratio is reflected in the amount of abrasion. The use of 60 to 65% of coarse aggregate (80 to 150 mm) from rock having a compressive strength not below 700 to 800 kg/sq cm, and with low water absorption, is recommended for obtaining concrete with good abrasion resistance.

Hopf, G. and Burmeister, J.
THE RETENTION OF LAUNDERING COMPOUNDS ON THE HUMAN SKIN, tr. by P. M. M. 19 Jan 54, 7p. 9 refs.
Order from SLA mi$1.80, ph$1.80 60-10393

Trans. of [Fette Seifen Anstrichmittel] (West Germany) 1953, v. 55 [no. 3] p. 178-180.

The retention of laundering compounds on textile fibers and human skin was examined by means of radioactive laundering compounds. It was found that even after rinsing with water considerable quantities of soap adhere to the fiber. The textiles made from animal fibers retain substantially larger quantities of soap than textiles made from plant or synthetic fibers. With reference to rinsing, it was found that vinegar rinses are more effective than water rinses. This reaction is more prominent with synthetic detergents than with soaps consisting of natural fatty acids. Considerable quantities of soap were retained on the skin after washing and rinsing. Differences in the soap and special preliminary treatment did not have as much influence as individual differences. It was also possible to ascertain from the measurements the quantity of soap residue and the duration of soap retention. (Author's summary)

Miche, R.
DIFFERENTIAL FLOTATION OF THE CALCITE AND OF THE PHOSPHATE OF LIME IN THE PHOSPHATE ORES OF NORTH AFRICA (Flottation Differentielle de la Calcite et du Phosphate de Chaux dans les Minérais de Phosphate d'Afrique du Nord). [1959] 25p. (2 figs. 6 tables omitted) 2 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-14721

Trans. of Revue de l'Industrie Minérale (France) 1934, no. 35 (606) p. 228-239.

Moore, A. E.
NOTES ON THE HYDRATION OF CEMENT. [1959] 4p. 10 refs.
Order from SLA mi$1.80, ph$1.80 60-10579

Trans. of Zement und Beton (Austria) 1959, no. 16, p. 19-20.

A lecture outlining the concepts of cement hydration developed in England and, particularly, in the physical chemistry department of the Cement and Concrete Association. (See also 60-10582)

Orlovskiy, V. S.
DESIGN OF LONG EXPERIMENTAL REINFORCED CONCRETE SLABS (Raschet Opytnykh Armobatonnykh Dorozhnykh Plit Bol'shoy Dliny) tr. by R. C. Halsall. Apr 59 [4]p. Library Communication no. 733; M516.
Order from LC or SLA mi$1.80. ph$1.80 59-22564

Trans. of Avtom[obil'nyye] Dorogi (USSR) 1958, v. 21, no. 9, p. 18-19.

A review.

Satalkin, A. F. and Kublanova, M. B.
MODIFICATION OF THE FUNDAMENTAL PROPERTIES OF CEMENT MORTAR AND CONCRETE UNDER THE INFLUENCE OF ADMIXTURES OF SURFACE-ACTIVE AGENTS (Izmeneniye Osnovnykh Svoystv Tsementnogo Rastvora iz Betona pod Vliyaniyem Dobavok Poverkhnostno-aktivnykh Veshchestv) tr. by G. N. Gibson. [1959] [6]p. 18 refs. Library Communication no. 539; T/L 863; M194.
Order from LC or SLA mi$1.80, ph$1.80 59-19088

Trans. of Akademiya Nauk SSSR. Doklady, 1950, v. 72, no. 3, p. 561-564.

Admixtures of surface-active substances were found to increase the plasticity of cement mortar and concrete more than three times and reduce the liberation of water. Small additions (0.1% of sulphite liquor and spent wash and 0.01% of sodium abietate) do not result in a lowering of compressive or tensile strength, but strength is even increased with time, due evidently to the structural elements of the hardening concrete being finer. Taking into account the plasticizing effect of the admixtures (i.e., with lowering of the water/cement ratio) the strength of concrete with admixtures increases in a still greater degree, which can lead to an economy of cement. The admixtures increase the limiting deformation and reduce the modulus of deformation of the mortar and concrete under compression and in tension. This may be attributed to the facts that (1) the total surface of sliding of the particles is increased due to the structure becoming finer and to the creation of a large number of structural elements in the hydrated film of the cement particles, and (2) the reduction of the water liberated, when the admixture is used, results in the retention of a large quantity of water in the concrete. For the same strength, a mortar containing added sulphite liquor has a limiting extensibility 1.5 times to twice as great as the mortar without the addition. The modulus of deformation of the mortar is reduced by 40%. The observed result was similar in experiments with concrete made with granite aggregate and with limestone aggregate. Compressibility and extensibility increase with the age of the concrete. With the increased extensibility the risk of cracks in a concrete covering is reduced. Sulphite liquor appreciably reduces the shrinkage of mortar in air during the first days (up to 28 days), and at the same time somewhat increases the volume increase in water. Additions of surface-active substances increase considerably the frost-resistance of concrete and mortar.

Strassen, H. zur.
COMBINED WATER IN HARDENED CEMENT. [1959] 2p.
Order from SLA mi$1.80, ph$1.80 60-10582

Trans. of Zement und Beton (Austria) 1959, no. 16, p. 36-37.

A lecture. (See also 60-10579)

Strassen, H. zur.
THE PROBLEM OF NON-SELECTIVE HYDRATION OF CEMENT MINERALS. [1959] 7p.
Order from SLA mi$1.80, ph$1.80 60-10577

Trans. of Zement und Beton (Austria) 1959, no. 16, p. 32-34.

A lecture.

## Ceramics and Refractories

STEKLO I KERAMIKA (USSR) 1959 [VOL. 16] NO. 9, P. 1-48 (Glass and Ceramics). [1959] [14]p. SOV-72-59-9-(1-16)/16.
Order from OTS $0.60, $3.50/6 mo. PB 141 068T-19
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

Fitzer, Erich.
MOLYBDENUM DISILICIDE AS A HIGH-TEMPERATURE MATERIAL (Molybaendisilizid als Hochtemperaturwerkstoff). [1958] [10]p. Encl. to OO-A-48646. Consists of figure captions only.
Order from LC or SLA mi$1.80, ph$1.80 AEC-tr-3543

Trans. of Plansee Proc. 2d Seminar, Reutte/Tyrol, 1955, p. 56-79 (1956).

Klasse, F., Heinz, A., and Hein, J.
COMPARISON METHOD FOR THE DETERMINATION OF THE HEAT CONDUCTIVITY OF CERAMIC MATERIALS. [1959] [27]p. 2 refs.
Order from LC or SLA mi$2.70, ph$4.80 AEC-tr-3751

Trans. of Deutsche Keramische Gesellschaft. Berichte (West Germany) 1957, v. 34 [no. 6] p. 183-189.

A comparison method for the determination of the best conductivity of ceramic materials which can be performed quite easily, was developed. The heat conductivity is obtained from a comparison of the temperature gradient occurring in two bodies in series (test and standard bodies) during constant heat flow whereby the lateral heat losses resulting in inaccuracies are eliminated by standardizing the instrument. The reproducibility of the test method is surprisingly favorable. The relative accuracy of the method amounts to ±2% of the value. The equipment which can be assembled with very simple means, is not only suitable for routine determinations in the ceramic laboratory but can be utilized also successfully in scientific research on account of the good reproducibility of the method. (Author)

Münzel, C.
METHOD FOR THE SPLITTING OF GLASS AND HOLLOW GLASS ARTICLES. [1959] 2p. (2 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 60-10226

Trans. of [German] patent, appl. 10 Feb 20, pat. 15 June 21.

The method is characterized by the use of an electric arc for splitting glass and hollow glass bodies. The arc is directed either by a magnet or a current of air. Advantages of the method include: (1) complete elimination of dangers of explosion, (2) more rapid means of splitting, and (3) a great reduction in costs. The innovation is described as excellent for splitting narrow glass rings from glass tubes and for splitting off caps in hollow glass bodies.

## Fuels, Lubricants, and Hydraulic Fluids

SURVEY OF RUSSIAN LITERATURE FOR RESEARCH ON UNSTABLE CHEMICAL SPECIES AND THE STABILIZATION THEREOF. [1959] [44]p. 79 refs. PAL 59-11.
Order from OTS $1.25 60-21041

The Russian chemical literature for the period January 1, 1952, to April 1, 1958, has been searched for evidence of research pertaining to the preparation and stabilization of free radicals or other unstable species for use in rocket propellants. The published work in the Russian chemical literature in the area investigated has been found to be substantially less than that of the United States. The general free-radical literature has shown no signs of breakthroughs pertinent to this area. Publications found on the chemistry of higher hydrogen peroxides suggest a possible interest in these species for use in propellants. (Extracted from the report)

Drongovskiy, Yu. N.
AUTOMATION OF BOOSTER STATIONS ON TRUNK OIL PIPELINES. [1959] 5p.
Order from ATS $9.00 ATS-58L35R

Trans. of Stroitel[istvo] Truboprovodov (USSR) 1959, v. 4, no. 4, p. 15-17.

Kaverina, N. I.
THE MECHANICAL DEGRADATION OF POLYISOBUTYLENE IN SOLUTION IN MINERAL OIL (Mekhanicheskaya Destruktsiya Poliizobutilena v Rastvore Mineral'nogo Masla). Nov 58 [6]p. 7 refs. TIL/T. 4790; M. 280.
Order from LC or SLA mi$1.80, ph$1.80 59-19157

Trans. of *Zh[urnal] Prikl[adnoy] Khim[ii] (USSR) 1956, v. 28, no. 9, p. 1450-1452.

The mechanical degradation was determined in a rotary device evolved by K. I. Klimov. The device represents a system of two coaxial cylinders, one of which is stationary, the inner one rotating at a speed of 1500 rpm. The annular space between the cylinders is filled with the test oil. The principal series of experiments was performed with 5% solutions of polymers in turbine oil "L" at temperatures between 0 and 90° with a speed gradient of 4000 $sec^{-1}$. The sharpest reduction in viscosity occurs during the first 30 minutes of operation of the rotary device. Thereafter the rate of reduction in viscosity diminishes appreciably. This primary sharp reduction in viscosity is apparently associated with the rapid degradation of the highest molecular components of the polymer. As the temperature increases the intensity of the mechanical degradation diminishes. At a temperature below 100° there is in practice no thermal degradation of polyisobutylene with a molecular weight between 15,000 to 30,000. It may therefore be considered that the observed degradation of polyisobutylene in the range of temperature from 0 to 90° is exclusively associated with mechanical properties of the system.

Kuwata, Tsutomu and Ueda, Hidehiko.
STUDIES ON TREATMENT METHODS FOR LOW-TEMPERATURE TAR. II. PREPARATION OF GASOLINE FROM LOW-TEMPERATURE TAR. [1959] 3p. (9 tables omitted).
Order from SLA mi$1.80, ph$1.80 60-10034

Summary trans. of Kogyo Kagaku Zasshi (Japan) 1944, v. 47, no. 7, p. 627-629.

Low temperature tar was extracted with 20-percent hydrated phenol in quantity of 30 percent relative to the low temperature tar. The 200° to 320°C fraction

of the extracted oil layer was subjected to hydrogenation-decomposition. A gasoline with aromatic content of over 50 percent was obtained by using a molybdenum system catalyst. The 78 octane number of this gasoline could be raised to 90 by adding 0.1 percent lead. The octane number of the heavy gasoline, which could be used as a safe fuel, was fairly high in view of its high aromatic content.

Lavrov, N. and others.
METHOD OF CALCULATING THE CHEMICAL COMPOSITION OF GAS PRODUCED IN UNDERGROUND GASIFICATION. [1959] [6]p.
Order from LC or SLA mi$1.80, ph$1.80 59-18355

Trans. of Podzemnaya Gazifikatsiya Ugley (USSR) 1957, v. 1, no. 4, p. 15ff.

By the method of dividing the total generating gas into two components (volatile gas and basic generating gas); the role of the volatile gas in the total process of gas formation can be demonstrated; the basic generating process can be clearly distinguished; its parameters (the calorific value of basic generating gas 900 - 1000 k cal/cu. m. N. T. P.) can be defined; and the contribution of each of the component parts to the calorific value of the total gas can be evaluated. (See also 59-10203, 59-18375)

Mazitova, F. N. and Paushkin, Ya. M.
NEW OXIDATION INHIBITORS FOR FUELS, AND ADDITIVES TO RAISE THE THERMAL STABILITY OF REACTIVE FUELS (Novyye Ingibitory Okisleniya Topliv i Prisadki dlya Povysheniya Termicheskoy Stabil'nosti Reaktivnykh Topliv]. 29 July 59, 6p. 5 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-10442

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv [i Masel] (USSR) 1958 [v. 3] no. 11, p. 10-12.
Another translation is available from ATS $5.70 as ATS-93L29R [1959] 4p.

Amino alkylphenols, alkylphenols, and their esters were synthesized and tested as antioxidants in various types of fuel. Alkylaminophenols were effective additives in ethylated gasoline, and 2, 6-diamino-4-tert-butylphenol (540 mins.) surpassed existing standard additives (ionol and p-hydroxydiphenylamine). The most effective additives for inhibition of resin formation in kerosine were the amino alkylphenols; existing standard additives (ionol and p-hydroxydiphenylamine) have almost no effect on resin formation in kerosine. The chemical stability of cracking-gasoline was determined from the induction period; the value of the stabilizing effect was also calculated. All the amino alkylphenols were more effective in cracking-gasoline than 1-naphthol. A particularly high effectiveness was shown by tert-butyldimethylphenol and 2, 6-diamino-4-tert-butylphenol. All of the synthesized amino alkylphenols lower sediment formation in fuel T-1 to a considerable degree, both in the presence and absence of a bronze plate. With lengthening of the alkyl chain of the substituent, there is an increase in effectiveness of the amino alkylphenol, and a good solubility of the additive in the fuel is also attained. The best of the additives tested was 2-amino-4-tert-amylphenol, in whose presence the amount of sediment in the fuel dropped by a factor of three.

Piquerez, Emile.
IMPROVED TANK FOR CONVEYANCE OF LIQUIDS OVER ANY TERRAIN, tr. by J. C. Levy. 30 Oct 59, 11p. (10 figs. omitted).
Order from LC or SLA mi$2.40, ph$3.30 59-22276

Trans. of French patent 795,285, gr. 20, cl. 4, appl. 13 Dec 34, granted 2 Jan 36, pub. 10 Mar 36.

The object of the invention is a novel mobile tank system so established as to permit movement with ease over any terrain, applicable particularly to the supplying of gasoline to airplanes at emergency airfields or to automobiles in open country fields. The tanks comprise large-capacity receptacles in the form of a volume of revolution. They are provided with hoops permitting them to be easily rolled and have hooking means at the two ends of their geometric axis for receiving a coupling device that is movable about the axis. The elastic hoops are preferably mounted directly on the periphery of the tank. The coupling sys-system is constituted by a frame connected with the tank by means of members turning in the axis of the tank and capable of rapid demounting from the tank. Forwardly the coupling system has a draft bar provided with hooking means, and rearwardly a hooking member disposed so as to receive the draft bar of a second tank equipped like the first. The coupling draft bar has two hinge joints (knuckles) about vertical axes, thus permitting the multiple tank train to take a curvilinear course. The coupling draft bar has two hinge joints in a horizontal axis in perpendicular relation to each other, thus permitting deformation of the multiple tank train on diversified terrain. Two or more of these hinge joints may be connected into a single one with plural pivoting axes. In a first embodiment the tank has, at its ends, fixed rods extending to the exterior. The coupling frame is rigid and carries semi-bushings resting on these rods, safety means being provided to maintain them in place. In a second embodiment the tank has, at its ends, recesses for receiving the ends of the pins secured to the coupling frame.

Sakabe, Tsutomu, Inouye, Katsuya and others.
STRUCTURE OF YUBARI COAL AS OBSERVED FROM PROPERTIES OF ITS BITUMEN AND PSEUDO-BITUMEN. [1959] [38]p. 36 refs.
Order from LC or SLA mi$3.00, ph$6.30 59-16355

Trans. of Nenryo Kyokai-Shi (Japan) 1953, v. 32, no. 319, p. 610-630.

Bitumen obtained from Yubari coal by pressurized benzene extraction, and pseudo-bitumen obtained by partial hydrogenolysis of the residual coal after extraction, where each divided into seven fractions by the use of ligroin, methanol, ether, acetone, and carbon tetrachloride. Considerations on the structure of Yubari coal are presented based on the melting point of each of the fractions, mean molecular weight, results of ultimate analysis, active radical content, iodine number, results of X-ray diffraction, magnetic susceptibility, and ultraviolet absorption spectral results.

Weber, Richard.
DETERMINATION OF WATER IN REFRIGERATING MACHINE OILS, tr. by J. C. Levy. 4 May 59, 10p. 9 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-16857

Trans. of Kaltetechnik (West Germany) 1954 [v. 6] p. 267-269.

## Leather and Textiles

SYNTHETIC WOOL (LANITAL). [1959] 3p. (1 fig. omitted) 1 ref.
Order from SLA mi$1.80, ph$1.80 60-10131

Trans. of Nature, Paris (France) 1936 II, July, p. 76-77.

Italian methods of extracting a wool-like textile, Lanital, from the casein of milk are described. The processes, devised by M. Ferretti, were based on analogies existing between casein and wool. In the technique of manufacture, casein is first precipitated by acid and then subjected to purification to remove all traces of mineral salt, soluble albumin, and lactic acid. A dissolving process then renders it spin-able. Coagulation is accomplished in a bath of formaldehyde base. The insoluble fiber is finally washed and dried. Lanitol fiber is longer and larger in diameter than wool. Its slightly rough surface is necessary for facility in spinning and for thermal insulation. Lanitol swells slightly in water and its fibers are insensible to acids and alkalies in dilute solutions. The characteristics of Lanitol are more uniform than those of wool. The synthetic material requires no expensive cleaning operation and it may be dyed. It has excellent thermal-insulating properties and cost much less to produce than wool. The economic considerations in France and Italy during 1936, which greatly influenced efforts to secure the synthetic material, are reviewed.

Frieser, E.
USE OF RADIOACTIVE ISOTOPES IN THE TEXTILE INDUSTRY. [1959] 25p. 41 refs.
Order from SLA mi$2.70, ph$4.80 60-10121

Trans. of Rayonne et Fibres Synt[hétiques] (Belgium) 1958 [v. 14, no. 8] p. 1157-1182.

Kohnstein, B.
THE SIGNIFICANCE OF PHOSPHATIDES AS TANNING AGENTS. [1959] 6p. 6 refs.
Order from SLA mi$1.80, ph$1.80 60-10518

Trans. of der Gerber (Austria) 1937, v. 63, p. 1-3.

Pollak, Leopold.
NEW TANNING AND AUXILIARY MATERIALS FOR THE LEATHER INDUSTRY. [1959] 6p.
Order from SLA mi$1.80, ph$1.80 60-10517

Trans. of der Gerber (Austria) 1926, v. 52, p. 63-65.

Richards, H.
RAYON FROM ANIMAL SUBSTANCES. [1959] 5p. 6 refs.
Order from SLA mi$1.80, ph$1.80 60-10146

Trans. of Monatschrift für Textil-Industrie (Germany) 1934, v. 49, p. 50-52.

Efforts to produce a synthetic material similar to true silk are traced from the first German patent for such processes issued in 1879. Each process or invention is briefly described.

Schneider, J.
FALSE TWIST SPINNERS; PREPARATION MACHINES FOR INDUSTRIAL MANUFACTURE OF TEXTILES OF CHEMICAL ORIGIN. [1959] 12p.
Order from ATS $12.30 ATS-38L29F

Trans. of Rayonne et Fibres Synthét[iques] (Belgium) 1958, v. 14, no. 2, p. 205-214.

## Photographic Materials

Bogomolov, K. S., Dobroserdova, E. P., and Zharkov, V. N.
INVESTIGATION OF ELECTRON SENSITIVITY OF PHOTOGRAPHIC EMULSIONS. [1959] 14p. 14 refs.
Order from LC or SLA mi$2.40, ph$3.30 60-10576

Trans. of Vsesoyuznyy Nauchno-Issledovatel'skiy Kinofotoinstitut. Trudy (USSR) 1957, no. 10(20) p. 41-49.

The dependence of the ratio between the photographic sensitivity to weakly-ionizing radiation and the sensitivity to more strongly ionizing radiation $S_{weak}/S_{strong}$ upon the degree of finishing of the photographic emulsion, was investigated by electron sensitometry. It was established that the value of the ratio $S_{weak}/S_{strong}$ increases when the degree of finishing the emulsion is increased. After a very short period of finishing, a tendency towards a constant asymptotic value of ratio $S_{weak}/S_{strong}$ appears. In practice it can be used for a relative increase in selectivity by strong or weak radiations by changing the degree of finishing within as narrow limits as possible. An experimental investigation showed that the sensitivity of low-dispersion emulsions to the effect of electrons having energies of 20 to 90 kev is directly proportional to the mean radius of the emulsion grains. This dependence is interpreted as a sign of photographic efficiency only in those secondary electrons which are formed by primary particles only in a thin surface layer of silver halide crystals. A tendency towards a somewhat more pronounced

dependence upon the grain size is observed in highly dispersed emulsions. This can be explained by the size of small emulsion grains which becomes commensurable with the thickness of the above-mentioned photographically effective surface layer of crystals. (Author)

Kozlov, P. V.
USE OF POLYMERS IN PHOTOGRAPHY. I. POLYMER FILMS USED AS SUPPORT FOR EMULSION LAYERS. [1959] [13]p. 25 refs.
Order from LC or SLA mi$2.40, ph$3.30 60-10591

Trans. of Zhur[nal] Nauch[noy i] Prikl[adnoy] Fot[ografii i] Kinemat[ografii] (USSR) 1959, v. 4, no. 1, p. 3-11.

Levkoyev, I. I., Lifshits, A. B. and others.
EFFECT OF THE STRUCTURE AND SOME PHYSICOCHEMICAL PROPERTIES OF POLYMETHINE DYES ON THEIR SENSITIZING POWER. [1959] 19p. 29 refs.
Order from LC or SLA mi$2.40, ph$3.30 60-10575

Trans. of Vsesoyuznyy Nauchno-Issledovatel'skiy Kinofotoinstitut. Trudy (USSR) 1957, no. 10(20) p. 55-67.

Investigations were made for explaining the relationship between the structure of a number of cyanines (I), mero-(II) and rhodacyanine (III) dyes, their sensitizing power on silver bromoiodide emulsions and some other physicochemical properties.

Zelikman, V. L.
THE WORK OF SOVIET SCIENTISTS IN THE FIELD OF PHOTOGRAPHIC EMULSION TECHNOLOGY. [1959] [27]p. 223 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-20839

Trans. of Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii (USSR) 1958, v. 3, no. 6, p. 452-468.

The review is presented in sections dealing with: (1) the perfection of apparatus for photographic emulsion technology and the improvement of different kinds of motion pictures; (2) classifications of photographic gelatins and methods of selecting them for emulsion making; (3) research on the making of photographic emulsions (4) formation of photographic properties in cinematographic materials; (5) the keeping properties of photographic coatings; (6) comparative estimation of various methods of making photographic emulsions and (7) a technological scheme for making photographic emulsions. The survey includes the photosensitive and sound recording products industry, which ranks second in the world.

Zimkin, Ye. A. and Garanina, Ye. Ye.
PHOTOGRAPHIC ACTIVITY OF COMPONENTS OF GELATIN. [1959] [8]p. 9 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-10595

Trans. of Zhur[nal] Nauch[noy i] Prikl[adnoy] Fot[ografii i] Kinemat[ografii] (USSR) 1959, v. 4, no. 2, p. 116-120.

An experimental study was made of the influence of cations on the chemical ripening of a photographic emulsion. The ripening rate was found to depend on the balance of cations from mineral compounds in the gelatin. The duration of ripening required for attaining maximum photosensitivity was greater in the presence of bivalent cations than in the presence of univalent cations. The cations, at the time of the second ripening of an emulsion, are presumed to interact with intermediate complexes of silver ions and accelerating compounds.

## Plastics

PLASTICS: 5. ACRYLICS. 6. POLYSTYRENE. [1959] [11]p.
Order from RIS RIS TB-180, sec. 5-6

Abstracts of trans. from German, Belgian and Italian patents, patent applications and research papers.

PLASTICS: 7. VINYLS. [1959] 14p.
Order from RIS RIS TB-180, sec. 7

Abstracts of trans. from German, Belgian and Italian patents, patent applications and research papers.

PLASTICS: 8. POLYAMIDES. 9. CELLULOSICS. 10. SILICONES. [1959] [12]p.
Order from RIS RIS TB-180, sec. 8-10

Abstracts of trans. from German, Belgian and Italian patents, patent applications and research papers.

PLASTICS: 11. ALDEHYDE RESINS. [1959] 9p.
Order from RIS RIS TB-180, sec. 11

Abstracts of trans. from German, Belgian and Italian patents, patent applications and research papers.

Igonin, L. A., Gintsberg, E. G. and others.
THE KINETICS OF PHENOL-FORMALDEHYDE RESIN SOLIDIFICATION BY MEANS OF HEXAMETHYLENE TETRAMINE (K Voprosu o Kinetike Otverzhdeniya Fenol'no-formal'degidnykh Smol s Pomoshch'yu Geksametilentetramina). Feb 58 [4]p. C. T. S. 413.
Order from LC or SLA mi$1.80, ph$1.80 59-19624

Trans. of Akademiya Nauk SSSR. Doklady, 1956, v. 111, no. 6, p. 1252-1254.

Leitz, Ernst.
PROCESS FOR MANUFACTURING FORMED ARTICLES AND COATINGS POSSESSING WEATHER-PROOFNESS, CHEMICAL RESISTANCE, SCRATCH RESISTANCE AND WATER REPELLENCY. [1959] 5p. 13 refs.
Order from LC or SLA mi$1. 80, ph$1. 80 60-10727

Trans. of German patent 968 056 (39b, 22/10) Internat. cl. C 08 f; g; C 09 f, pat. 25 Aug 42 (8 May 45 to 7 May 50 excepted) appl. 8 Jan 53, granted 27 Dec 57, issued 9 Jan 58.

The process is characterized in that polymerization products of monomeric unsaturated, polymerizable carbon compounds and low-polymeric silicones are formed, possibly in the presence of solvents, and cured at elevated temperature.

Natta, G. and Asta, G. dall'
PROCESS FOR THE POLYMERIZATION OF ACRYLONITRILE AND POLYMERS OBTAINED THEREBY. 1 Oct 59, 6p. 1 ref.
Order from LC or SLA mi$1. 80, ph$1. 80 60-10730

Trans. of French patent 1,183,644, cl. 8, gr. 14, Internat. cl. C 08 f, appl. 1 Oct 57, granted 26 Jan 59, pub. 9 July 59 (Priority: Italy, 4 Oct 56) by Montecatini (Soc. Gen. Industria Mineraria e Chimica).

A process is described for the polymerization of acrylonitrile into linear high polymers containing chain sections with a syndiotactic configuration of monomer units. This process is characteristic by the fact that one uses a catalyst obtained from an organometallic compound of a metal of the first, second and third groups of the Periodic Table and a compound of a transition metal of the fourth, fifth and sixth groups of the Periodic Table, in which the metal is linked to the organic groups by means of oxygen atoms.

Scheiber, J[ohannes] and Barthel, Rudolf.
MECHANISM OF HARDENING PHENOL-ALDEHYDE RESINS. [1959] [8]p. 21 refs.
Order from SLA mi$1. 80, ph$1. 80 60-10432

Trans. of J[ournal für] Pr[aktische] Chem[ie] (Germany) 1936 [Neue Folge] v. 147 [no. 1/5] p. 99-109.

## Rubber and Elastomers

Jedlicka, Helmut.
PROCESS FOR MANUFACTURING PLASTIC ELASTOMERS WITH REBOUND ELASTICITY FROM ORGANOPOLYSILOXANES. [1959] 4p. 4 refs.
Order from LC or SLA mi$1. 80, ph$1. 80 60-10731

Trans. of German patent 1 032 530 (39b, 22/10) Internat. cl. C 08 g, filed 29 Aug 56, pub. 19 June 58, issued 27 Nov 58.

A process is presented for manufacturing plastic elastomers with rebound elasticity from organopolysiloxanes, using methylsilicones polymerized with a boron compound and fillers as well as possible additions of zinc hydroxide or iron chloride. The process is characterized in that, in lieu of or in addition to inorganic fillers commonly used for the manufacture of bouncing putties, at least about 50% by weight of poly(vinyl chloride), relative to the methylsilicone polymerized with the boron compound, is utilized as filler and extender. A variant of process is characterized in that the methylsilicone polymerized with the boron compound is kneaded and formed, together with fine poly(vinyl chloride) powder, in an extruder with perforated-disc die or in equipment incorporating a feed screw, a rotating knife, and a perforated disc.

Sakhnovskiy, N. L. and Smirnova, L. A.
WEAR RESISTANCE OF RUBBERS AND MEANS OF IMPROVING IT. [1959] [20]p. 51 refs.
Order from LC or SLA mi$2. 40, $3. 30 60-10560

Trans. of Khimicheskaya Nauka i Promyshlennost' (USSR) 1959, v. 4 [no. 1] p. 35-41.

The present literature review discusses wear resistance as a function of the type of polymer, and as a function of the reinforcing agents employed. Most of the references are non-Soviet.

## Wood and Paper

Berseniyev, A. P. and Fokin, A. G.
AN EXPERIMENT ON THE USE OF RADIOACTIVE ISOTOPES FOR RESEARCH WITH WOOD (Opyt Ispolzovaniye Radioaktivnykh Isotopov dlya Issledovaniya Drevesiny). [1959] [9]p. (3 figs. omitted) 2 refs.
Order from LC or SLA mi$1. 80, ph$1. 80 60-10699

Trans. of Derevoobrabatyvayushchaya Promyshlennost' (USSR) [1958?] no. 8, p. 11-13.

Results are presented of our experiments to determine the degree of penetration of radioactive isotopes (β rays) into wood of various species and to establish the relationship between this penetration and moisture, gross weight and thickness of the test samples. The experiments were performed on samples with a thickness of 1, 2, 4, and 8 mm. from pine, elm, birch, beech and larch. As β-emitters, the isotopes $Sr^{90}$ and $Ru^{106}$ were used, which emit radiation and have a long half-life.

Björkgren, L. H.
PROCESS FOR TREATING TALL OIL. [1959] [6]p.
Order from LC or SLA mi$1. 80, ph$1. 80 60-10728

Trans. of Swedish patent 70,794, cl. 12:$o_{2s}$, pat. 22 Sep 27, made public 16 Dec 30.

Brynhildsen, H. O. and Dagel, Y.
REPRODUCIBILITY AND SOURCES OF ERROR IN THE DETERMINATION OF THE CRUSH RESISTANCE OF CORRUGATED BOARD. Nov 59, 10p. (13 figs. 4 tables omitted) 9 refs.
Order from SLA mi$1.80, ph$1.80 60-10709

Trans. of Svensk Pappers-Tid[ning] (Sweden) 1959, v. 62, no. 18, p. [631-639].

An attempt was made to determine the variation in the mean values in and between different laboratories and to analyse the causes of variation. The investigation showed that the reproducibility of the crush resistance determination of corrugated board is relatively good compared for example with the burst resistance determination for corrugated board. The mean reproducibility is 16.8%, which may be accepted as satisfactory. However the reproducibility should be capable of improvement by a more accurate testing method. Difficulties arise with the evaluation of slipping flutes. The most important source of error in the apparatus is the lateral free motion and it is hence particularly important to eliminate this. Should this be brought about, it will result in higher crush resistance values, less scattering, and no problem of slipping flutes.

Hochauz, E.
INVESTIGATIONS ON THE USE OF VEGETABLE GUMS IN PAPER-MAKING. Sep 59 [10]p. (10 figs. omitted) 8 refs.
Order from SLA mi$1.80, ph$1.80 60-10737

Trans. of Zellstoff und Papier (Germany) 1959 [v. 8] no. 7, p. 256-261.

The advantages and disadvantages were investigated of employing vegetable gums (galactomannans) during manufacture of (1) paper from which at the same time high tear and breaking strength is required, such as paper used for sacks and cable manufacture, (2) paper with well-closed formation, such as parchment and tracing paper, and (3) high-filler-content papers. In all cases there was an improvement in paper quality (strength properties, smoothness, permeability to light and transparency) and in machine operation (increase in running speed of 10 to 13% and a saving in consumption in the dryer due to better drainage of the pulp). Furthermore the addition of gum of the strength type reduces the beating period by 20 to 30% (i.e., a saving in beating energy consumption) without affecting strength properties. The use of gums of the retention type offers an improvement in fines and filler retention amounting to approx. 20 to 40%, and accordingly a reduction in the burden on the fibre recovery plant. The increase in porosity (i.e., permeability to air or grease) would be a disadvantage for several grades of paper.

Warlimont, P.
THE SHRINKAGE AND SWELLING OF WOOD. [1959] 7p. (5 figs. omitted) 3 refs.
Order from SLA mi$1.80, ph$1.80 59-20495

Trans. of Maschinenbau (Germany) 1931, v. 10, no. 2, p. 47-50.

It is shown on the basis of a series of experiments that the age and manner of the pre-treatment of wood has no effect on the swelling and contraction of wood. (Author)

Wultsch, Ferdinand.
SHORT FIBER-HARDWOODS IN PAPERMAKING. [1959] 2p.
Order from SLA mi$1.80, ph$1.80 60-10119

Trans. of Osterreichische Papier-Zeitung (Austria) 1959, v. 65, no. 1, p. 13.

The article translated is a digest of a paper presented by Dr. Wultsch at the fall convention of the southern division of the Association of Austrian Pulp and Paper Chemists in Graz.

## MATHEMATICS

Rubinshteyn, G. Sh.
A GENERALIZATION OF THE PROBLEM CONCERNING THE EXTREME INTERSECTION POINT OF AN AXIS WITH A CONVEX POLYHEDRON (Obobshcheniye Zadachi o Krayney Tochke Peresecheniya Osi s Vypuklym Mnogogrannikom) tr. by M. H. Gourary, J. R. Isbell and W. H. Marlow. Rept. on Logistics Research Proj. Contract Nonr-761(05). 19 Sep 58 [14]p. 14 refs. Serial T-91/58.
Order from LC or SLA mi$2.40, ph$3.30 59-18263

Trans. of Akademiya Nauk SSSR. Doklady, 1957, v. 113, p. 987-990.

An equipment work-load problem and a transportation problem are presented as illustrations of a general geometric problem that is solved by the method of resolving multipliers.

## MECHANICS

AKADEMIYA NAUK SSSR. OTDELENIYE TEKHNICHESKIKH NAUK. IZVESTIYA: MEKHANIKA I MASHINOSTROYENIYE, 1959, NO. 3, P. 3-216. (News of the Academy of Sciences of the USSR. Dept. of Technical Sciences, Mechanics and Machine Welding). [1959] 1v. SOV-179-59-3-(1-45)/45.
Order from OTS $1.00, $5.00/6 mo. PB 141 019T-18
Foreign $1.25, $7.00/6 mo.

Consists of abstracts in English.

Aleksandryan, R. A., Arutyunyan, N. Kh., and Manukyan, M. M.
TORSION OF THIN-WALLED TUBES UNDER CONDITIONS OF TRANSIENT CREEP (Krucheniye Tonkostennykh Sterzhney Zamknutogo Profilya v Usloviyakh Neustanovivsheysya Polzuchesti). Aug 59 [19]p. 13 refs. RTS no. 1064.
Order from LC or SLA mi$2.40, ph$3.30 59-19458

Trans. of *Prikladnaya Matematika i Mekhanika (USSR) 1958, v. 22, no. 6, p. 766-780.

The connection between strains and stresses in nonlinear creep is considered with the help of previous equations (N. Kh. Arutyunyan, Some problems of the theory of creep, in Russian, State Publishing House for Theoretical and Technical Literature, Moscow-Leningrad, 1952). A generalization is given of Bredt's theorem on the distribution of tangential stresses during the torsion of a prismatic tube of arbitary cross-section under conditions of transient creep and variations in the instantaneous strain modulus. The problem of the transient creep of a thin-walled tube under torsion due to a constant moment M is solved by use of this theorem. The relaxation problem of the torsion of a thin-walled tube subject to transient creep under an arbitrary nonlinear law is considered. The solution of this problem is reduced to the solution of Volterra's nonlinear integral equation of the second kind, which is investigated and solved. The solution of the problem of relaxation of torque in a thin-walled tube of hollow cross-section with an exponential law connecting the creep strains and stresses is included as an example.

Bleich, Hans.
CONCERNING THE PROPORTIONING OF STATICALLY INDETERMINATE STEEL-STRUCTURES UNDER CONSIDERATION OF THE ELASTIC-PLASTIC BEHAVIOR OF THE MATERIAL (Über die Bemessung Statisch Unbestimmter Stahltragwerke unter Berücksichtigung des Elastisch-Plastischen Verhaltens des Baustoffes). [1959] [32]p. 4 refs.
Order from SLA mi$2.40, ph$3.30 59-20886

Trans. of der Bauingenieur (Germany) 1932, v. 13, no. 19/20, p. 261-267.

The work contains a general approach for proportioning indeterminate systems under consideration of plasticity. It is essential, also, to make an accounting for the influence of live-loads or moving-loads. This approach is demonstrated for first and second-degree statically indeterminte systems and its application shown for a series of examples. (Author)

Finkel'shteyn, B. N. and Fastov, N. S.
THEORY OF RELAXATION PHENOMENA IN SOLIDS. [1959] [6]p.
Order from LC or SLA mi$1.80, ph$1.80 AEC-tr-3702

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1950, v. 71, p. 875-878.

A theory of relaxation phenomena in solids is formed on the basis of general thermodynamic considerations analogous to those brought forward by L. I. Mandel'shtam and M. A. Leontovich (Zhur. Eksptl. i Teoret. Fiz. 7: 438, 1937) in the theory of the absorption of sound in liquids. If the strained state is changed in an elastic body with the ultimate speed, then a deviation from the static equilibrium state takes place at every moment. An expression for the relaxation tensor is introduced and developed in terms of body state isothermal changes.

Lenskiy, V. S.
ACOUSTIC VARIANT OF THE THEORY OF SPALLING. [1959] [5]p. 10 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-10311

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1956, v. 20, no. 4, p. 552-554.

Mustel, E. R.
ELECTROMAGNETIC OSCILLATIONS IN A PARABOLIC PIPE AS A PARTICULAR CASE OF THE INTERACTION OF TWO CAVITIES THROUGH A BEND. [1959] [14]p. 5 refs. AF-27.
Order from LC or SLA mi$2.40, ph$3.30 59-16687

Trans. of [Zhurnal Tekhnicheskoy Fiziki] (USSR) 1955, v. 25, no. 10, p. 1788-1799.

The pipe is considered to have a rectangular cross section and to consist of two cavities which interact through a bend. The walls are assumed to be ideally conducting. The lowest intrinsic oscillation (i.e., of an $LM_{10}$ wave that is identical to the $H_{10}$ wave) is examined. For the condition where the cavities that comprise the parabolic tube are identical, equations are derived for the symmetrical and antisymmetrical coefficient ratios $\beta_s$ and $\beta_{as}$ and for the functions $\phi_s$ and $\phi_{as}$ that correspond respectively to the symmetrical analytical continuation existing for the condition that $(\partial\phi/\partial\eta)_{\eta=0} = 0$ and the antisymmetrical continuation existing for $\phi(0) = 0$ (here $\eta$ represents one of the parabolic coordinates); (2) the spectrum of the intrinsic values of the wave number, k; (3) the intrinsic values of k; and (4) the electric field component $E_z$ for symmetrical and nonsymmetrical oscillations. For the case where the cavities differ in length with respect to $\eta$, equations are derived for determining the intrinsic values of k. An experimental unit, consisting of a 135- by 30-mm rectangular waveguide attached to one end ($\eta = 11.3$) of a parabolic pipe with two identical cavities connected by flanges at their 50- by 30-mm narrowest points ($\eta = 0$), was used to obtain (1) a spectrum of k; (2) a distribution of $E_z$ along the $\eta$ axis for the fields $\lambda_s = 11.79$ and $\lambda_{as} = 11.78$ cm; and (3) the distribution of the field when there is no barrier ($\lambda = 9.02$ and 9.20 cm). These parameters were in fundamental agreement with the same quantities as calculated from the equations.

Timoshenko, S.
BENDING OF JOIST AGGREGATES (Uber die Biegung von Trägerrosten). [1959] 22p. 1 ref. (foreign text included).
Order from LC or SLA mi$2.70, ph$4.80 AEC-tr-3545

Trans. of Z[eitschrift] für Angewandte Mathematik und Mechanik (Germany) 1933, v. 13, p. 153-159.

An approximation solution can be obtained by the use of trigonometric series for the elastic lines of the joists for the case of a joist aggregate consisting of several identical joists which have been distributed at equal distances from each other and which are supported by one or several girders. The approximation formulas obtained in this manner for the greatest deflection of the girders are very simple and can be utilized to advantage in practical calculations. (Author)

Tumarkin, S. A.
CALCULATION OF SYMMETRICALLY LOADED TOROIDAL SHELLS WITH THE AID OF TRIGONOMETRIC SERIES (Raschet Simmetrichno Nagruzhennykh Toroobraznykh Obolochek pri Pomoshchi Trigonometricheskikh Ryadov) tr. by G. F. Miller. Aug 53 [11]p. 5 refs. Library Communication no. 642; TL 1169; M261.
Order from LC or SLA mi$2.40, ph$3.30 59-19140

Trans. of Prik[ladnaya] Mat[ematika] i Mekh[anika] (USSR) 1952, v. 16, no. 5, p. 569-574.

Ushakov, K. A. and Bushel, A. R.
RESEARCH ON THE INFLUENCE OF THE NUMBER OF BLADES ON THE CHARACTERISTICS OF AN AXIAL VENTILATOR (Issledovaniye Vliyaniya Chisla Lopatok na Kharakteristiku Osevogo Ventilyatora). Aug 59 [15]p. RTS no. 1079.
Order from LC or SLA mi$2.40, ph$3.30 59-19441

Trans. of Promyshlennaya Aerodinamika (USSR) 1958, no. 10, p. 36-42.

A team of research workers found that by preserving the thickness of the grates in a characteristic section of a given bladed crown, a change in the number of blades significantly influences the stage's work. By decreasing the dimensions of the blades, i.e., by increasing their number, the pressure developed by the stage, especially when close to its maximum moments, and the magnitude of the stage's efficiency factor are decreased. Research on the influence on the characteristics of a ventilator by a number of blades of simple profile and of constant summary width confirmed that even with similar Re, the ring with the larger number of blades, i.e., with increased angle of opening for an equivalent diffuser, significantly deteriorates the work of the interblade channels and thus reduced the pressure created by the ring and the power demanded.

## METALLURGY

*FIZIKA METALLOV I METALLOVEDENIYE (USSR) 1959, V. 7, NO. 4, P. 481-640 (Physics of Metals and Metallography). [1959] 1v. SOV-126-7-4-(1-26)/26.
Order from OTS $0.80, $4.75/year PB 141 126T-10
Foreign $1.05, $6.25/year

Consists of abstracts in English.

KOKS I KHIMIYA (USSR) 1959 (Coke and Chemistry). [1959]
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

No. 7, p. 3-79, PB 141 063T-19
No. 9, p. 3-64, PB 141 063T-21

METALLURGIST, 1958, NO. 11, P. 555-612. 1959, 1v.
Order from CB $12.50, $95.00/year

Trans. of Metallurg (USSR) 1958 [v. 3] no. 11, p. 1-[48].

METALLURGIST, 1958, NO. 12, P. 613-700. 1959, 1v.
Order from CB $12.50, $95.00/year

Trans. of Metallurg (USSR) 1958 [v. 3] no. 12, p. 1-[44].

*ZAVODSKAYA LABORATORIYA (USSR) 1959, V. 25, NO. 9, P. 1023-1151 (Plant Laboratory). [1959] 1v. SOV-32-25-9-(1-53)/53.
Order from OTS $1.00, $5.50/6 mo. PB 141 027T-22
Foreign $1.25, $7.00/6 mo.

Consists of abstracts in English.

Beranek, Jiri and Holub, Frantisek.
TREATMENT OF URANIUM ORE. I. LEACHING OF URANIUM ORE AND PRECIPITATION OF URANIUM SALTS. [1959] 14p. 10 refs.
Order from LC or SLA mi$2.40, ph$3.30 AEC-tr-3593

Trans. from Jaderna Energie (Czechoslovakia) 1958, v. 4, no. 2.

The purpose of this article is to provide information about a plan for test production of metallic uranium from Czechoslovak uranium ores. The article describes basic technological procedures applicable to our ores, including a description of the test production plan. The article will appear in three parts. The first part deals with the method of leaching iron ores and with precipitation of uranium from its solutions. (Author)

Lavalette, G. de and Partiot, E.
SULFINUZATION (CEMENTATION WITH SULFUR) tr. by R. E. P. 21 Nov 54, 27p. (figs. omitted).
Order from SLA mi$2.70, ph$4.80 60-10735

Trans. of S[ociété des] I[ngenieurs de] l'A[utomobile]. Journal (France) 1952 [v. 25] May, p. 119-129.

Translations are presented of the following lectures and the ensuing discussion: (1) The development of sulfinuzation, by G. de Lavalette; (2) The sulfinuzation process, by E. Partiot; and (3) The principal applications of sulfinuzation, by G. de Lavalette.

Vargaftik, N. B. and Oleshchuk, O. N.
THE THERMAL CONDUCTIVITY OF SLAGS IN THE SOLID AND MOLTEN STATES (Teploprovodnost' Shlakov v Tverdom i Rasplaviennom Sestoyanii). Aug 59 [15]p. 13 refs. R. T. S. no. 1063.
Order from LC or SLA mi$2.40, ph$3.30 59-19247

Trans. of Teploenergetika (USSR) 1958 [v. 5] no. 12, p. 79-85.

Thermal conductivities of solid and porous slags were determined by measuring the temperature difference between 2 coaxial cylinders when the space between them was filled by slag. Tests up to 1100°C were made in a thermostatic oven of stainless steel. At higher temperatures a porcelain thermostatic oven was used. The circuit diagram of the electric thermometer is given. The instrument was calibrated on substances of known thermal conductivity, such as water and castor oil at room temperature and molten salts at a temperature of 200°C. Before measurements were made on slag, both instruments were used to measure the thermal conductivity of different glasses similar in composition to slag. Analyses of the glasses used, 1 of which contains 4% cobalt, are recorded. Test results with glass are noted and plotted, and agreed with published data for glass of comparable composition to within 2% in the temperature range from 0 to 500°C. Test results showed that the thermal conductivity of the slag of lean coal increased with temperature in both the solid and molten conditions. Further work on slags made use of the combustion products of washery wastes and shales. A formula was derived for the thermal conductivity curve of the slags over the temperature range 0° to 1000°C and a further formula with different constants for high temperatures. The Debai (sic) theory indicated that the thermal conductivity of glasses and slags should increase with temperature; test results confirmed this. Values of thermal conductivity, specific heat, and the ratio of thermal conductivity to specific heat for slag in the solid condition over the temperature range 0° to 1000°C are tabulated. The ratio is practically independent of the temperature. Thermal conductivity of porous slag is lower than that of solids.

Wahlberg, T. and Fredholm, L.
INVESTIGATION OF THE REACTION PRODUCTS FORMED AT THE CONTACT SURFACE BETWEEN MOLTEN STEEL AND REFRACTORY BRICK. [1959] [26]p. 7 refs.
Order from SLA mi$2.70, ph$4.80 60-10272

Trans. of Jernkontoret [Stockholm]. Annaler (Sweden) 1953, v. 137, no. 1, p. 1-26.

A method has been worked out for the isolation of reaction products formed at the contact surface between fire-clay brick and liquid steel. The material isolated was investigated analytically and microscopically. The eroding action of the steel was found to be caused by a reaction between the manganese in the steel and the silica in the brick, manganous oxide and silicon being formed. The manganous oxide dissolves the brick material forming manganese-aluminum-silicate. The microscopic investigations confirmed the above findings. Mullite is formed at the boundary between the reaction layer and the brick, preferentially at the surface of the grog grains. On the other hand no mullite is formed in contact with the quartz grains. (Author)

COMPOSITION AND PROPERTIES OF SOVIET GAS TURBINE STEELS. 11 Dec 59 [43]p. 99 refs. AF 1256322.
Order from OTS $1.25 60-21031

Trans. from 1954-59 Soviet publications.

The Soviet definition of heat-resistant steels covers 2 major classifications (heat-proof and heat-stable or scale-resistant). General characteristics are described in terms of in-service requirements of the steels. The standard letter-number system for designation coding is explained. A chart shows alloying elements, international symbols and Soviet letter designations (in Cyrillic alphabet and in transliteration). The heat-resistant gas turbine alloys are arranged in 7 classes, in order of increasing service temperature limits.

Asano, Eiichiro.
THE RELATION BETWEEN TEMPERING AND STRAIN AFTER COLD WORK OR HOT-COLD WORK, IN TIMKEN 16-25-6 ALLOY, PT. 3 OF STUDY ON HEAT-RESISTING STEEL. [1959] 19p. 2 refs.
Order from SLA mi$2.40, ph$3.30 60-10297

Trans. of Tetsu to Hagane (Japan) 1952, v. 38, no. 7, p. 41-47.

Four samples of different chemical components were worked at 650°C, 900°C, and 1000°C by Amsler's tensile strength test machine. The percentage reduction in area at several points of these tensile tested pieces were measured as the ratio of working. First, the tensile strength at high temperature was measured Then, by determining the relation between the ratio of reduction in area and its distance from fracture point and by observing the microstructure in worked samples; the structure after working was found to be different depending upon working temperature even in the samples of the same components. These differences in the tangents of the ratio of reduction in area and the microstructure, even in the samples of the same chemical components, seemed to be due to the differences of mechanism of fracture and reduction depending upon reducing temperature. According to the data of the hardness and the ratio of reduction in area, remarkable effects of nitrogen content in the Timken alloy were recognized in hot-cold worked or cold worked samples. All these specimens were tempered at 650°C and 800°C from one hour to 25 hours, and the hardness was measured. The cold worked samples (at 650°C) had the highest hardness and seemed to be effective as far as the strength is concerned. The hot-cold worked samples (at 900°C) had relatively high hardness and some work effect remained. But there was little effect at 1000°C. As to the component of nitrogen, the hot-cold work or cold work in this alloy became effective upon containing 0.16N ("B4") and almost no effect was recognized in the sample containing 0.04 % N ("B1"). The data obtained by the tempering test lead to a conclusion that the effect of hot-cold work and cold work at the

temperature at which the worked materials are to be exposed in practical use, remains after heating at 550°C, but does not after heating at 800°C. Within the range of this test, it seems that the effect of cold work is to let the material keep its strength mainly by work strain, being supplemented by the precipitation hardening accelerated by the work strain, and that of the hot-cold work is to let the material maintain its strength both by hardness due to work strain and by precipitation hardening accelerated by work strain simultaneously. (See also 60-10296)

Baeckström, S.
LARGE SILICATE INCLUSIONS IN ACID OPEN-HEARTH BALL BEARING STEEL DURING DIFFERENT STAGES OF THE HEAT. [1959] [13]p.
Order from SLA mi$2.40, ph$3.30 60-10299

Trans. of Jernkontoret [Stockholm]. Annaler (Sweden) 1953, v. 137, no. 4, p. 117-126.

The amount of fairly large silicate inclusions in acid open hearth steel of ball bearing quality has been studied at different stages of manufacture. At first samples were taken of the molten steel by means of unisolated iron dippers, shaped like ingot molds. Samples taken from the ladle showed signs of not having solidified until after the largest inclusions had had time to float up. Sampling in the ladle was time consuming, hence the dippers had time to become strongly heated. For this reason the unisolated iron dippers were replaced by small molds of copper, externally isolated with asbestos and surrounded by a can of soft iron. In this way rapid solidification was achieved also in samples taken from the ladle. Spherical silicate inclusions were counted on central longitudinal sections from the samples. Spherules having a diameter of 10 microns or more were included. The number of spherules per 10 sq cm, the average observed diameter and the volume percentage of slag spherules were calculated. The results are by and large in agreement with earlier findings by Hultgren in a similar investigation of basic electric steel. Before addition of the alloys the amount of inclusions in the bath was quite low (about $0.2 \times 10^{-3}$ volume percent). Addition of silicomanganese and ferrochrome caused an increase to about $0.5 \times 10^{-3}$ volume percent. The slag content then sank till just before pouring, but increased strongly when the steel had been poured into the ladle (to about $1.5 \times 10^{-3}$ volume percent). When the steel had been held for 10 minutes in the ladle, the amount of inclusions had fallen off to about 0.7 to $0.8 \times 10^{-3}$ volume percent. Samples taken from the stream during casting and from newly filled mold also contained about $0.8 \times 10^{-3}$ volume percent of inclusions. (Author)

Bastien, P.
THE CRACKING AND FRACTURE OF STEEL CHARGED WITH HYDROGEN. [1959].
Order from BISI £7 BISITS 1260

Trans. of Materialprüfung (West Germany) 1959 [v. 1, no. 1] p. 3-12.

Brotzmann, K., Thielmann, H., and Maas, H.
COMMERCIAL VACUUM TREATMENT OF STEEL FOR ROLLING AND FORGING INGOTS AND CASTINGS; A GENERAL DISCUSSION AND APPENDIX. [1959] 4900 words.
Order from HB $7.90 HB-4606

Trans. of Stahl und Eisen (West Germany) 1959, v. 79, no. 9, p. 634-638, and no. 5, p. 276-282.

Relative merits of vacuum-lifter (Dortmund-Hörde) and recirculation or closed-circuit (Ruhrstahl) processes. Supplementary data on closed-circuit, Ruhrstahl process. Experimental work done at Huckingen on degassing 40-ton heats in ladle and results obtained. Degassing after filling the mold (Hoesch-Westfalen). Variation of nitrogen content in relation to oxygen content. Appendix: Vacuum Degassing of Liquid Steel by Closed Circuit Process as Applicable to Ladle Treatment. (HB abstract)

Buch, G.
INSTALLATION AND OPERATION OF THE REVERSING HOT-STRIP MILL. 1959.
Order from BISI £3 BISITS 971

Trans. of Blech (West Germany) 1957, Nov, p. 81-85.

Heiskanen, S[akari].
METALLOGRAPHIC ANALYSIS AND ITS APPLICATION IN THE INVESTIGATION OF STEEL. [1959] [81]p. 40 refs.
Order from SLA mi$4.80, ph$13.80 60-10300

Trans. of Jernkontoret [Stockholm]. Annaler (Sweden) 1955, v. 139, no. 2, p. 78-134.

Helmer, Govert.
DETERMINATION OF COARSE SLAG INCLUSIONS IN HIGH CARBON STEEL. [1959] [11]p.
Order from SLA mi$2.40, ph$3.30 60-10298

Trans. of Jernkontoret [Stockholm]. Annaler (Sweden) 1953, v. 137, no. 4, p. 128-138.

The amount of coarse slag inclusions in high carbon steel can be approximately estimated in a modified stepdown turning test.

Neumann, F., Schenck, H., and Patterson, W.
IRON-CARBON ALLOYS CONSIDERED FROM THE THERMO-DYNAMIC ASPECT. 1959.
Order from BISI £10 BISITS 1344

Trans. of Giesserei, Tech[nische]-Wiss[enschaftliche] Beihefte (West Germany) 1959, Jan, p. 1217-1246.

Prozorov, L. V.
EXTRUSION OF STEEL. [1959] [359]p. 44 refs.
F-TS-9806/V.
Order from LC or SLA mi$11.10, ph$54.60 60-13307

Trans. of mono. [Pressovaniye Stali, Moscow, 1956] July 59.

The elements of theoretical analysis of the flow of metals during extrusion and the results of experimental research on the extrusion of steel are stated. Technological processes of extrusion are recommended, as well as lubricants for the extrusion of steel and designs for tools and equipment. This book is intended for engineers and technicians engaged in the work of processing metals under pressure. It may also be used by students specializing in the field of extrusion.

Thum, A.
COMPARATIVE STRENGTH INVESTIGATIONS WITH QUENCHED AND TEMPERED STEELS. COMPARISON OF SILICON-MANGANESE AND CHROMIUM-MANGANESE STEELS WITH CHROMIUM-MOLYBDENUM STEELS (Vergleichende Festigkeitsuntersuchungen an Vergütungsstahlen. Vergleich von Silizium-Mangan-und Chrom-Mangan -Stählen mit Chrom-Molybdän Stählen). [1959] [25]p.
Order from SLA mi$2.70, ph$4.80 59-20575

Trans. of unidentified mono., Darmstadt, 1942.

The tests performed and their evaluation have shown that silicon-manganese and chromium-manganese steels practically do not differ from the chromium-molybdenum steels in the fatigue strength values and the notch sensitivity or stress concentration index. A comparison of the SM and electric qualities showed no indications of a better strength behavior of the electric steels. For alternating loading the line effect showed a strength decrease in transverse direction which probably is still greater for the third direction. The decrease in strength as a result of line effect was observed particularly for bending loads. It was hardly pronounced for torsional loading. The decrease in strength was greatest for high strength values, while notched specimens showed smaller decreases than smooth specimens. The tenacity values which are decisive for the absorption of forced deformations are more favorable for the chromium-molybdenum steels than for the silicon-manganese and chromium-manganese steels. However, by means of double quench and temper it was possible to attain approximately the tenacities of the chromium-molybdenum steels.

Timoshuk, L. T.
DETERMINING ENDURANCE LIMIT OF STEEL DURING REPEATED IMPACT TENSILE STRESS. [1959] [13]p. 2 refs.
Order from LC or SLA mi$2.40, ph$3.30 60-10309

Trans. of Zavodskaya Laboratoriya (USSR) 1956, v. 22, no. 12, p. 1487-1489.

The use of the piezoelectric crystal indicator with a cathode oscillograph made it possible to measure the stresses in the specimen forming during repeated tensile strains. The tensile stresses in the specimen subjected to the action of repeated impacts alternating at an interval of 0.1 sec did not remain constant in spite of the fact that similar impacts are imparted to the specimen. For the 50 steel for instance the first impacts caused in the specimen bigger stresses than the subsequent. Steels with close values as regards static characteristics of the mechanical properties can differ strongly in their aptitude to deformation in tensile strain tests during repeated impacts depending upon the make of steel. The applied method renders it also possible for a repeated impact to make an endurance curve on the basis of the coordinates pressure - number of impacts.

Ulmo, Jeanine, Bastenaire, Francois, and Borione, René.
METALLOGRAPHY: A STATISTICAL STUDY OF THE CHANGES OF ELASTICITY WITH TEMPERATURE IN SOFT AND EXTRA-SOFT STEEL, tr. by R. E. P. 28 Aug 53, 2p. (2 figs. omitted).
Order from SLA mi$1.80, ph$1.80 60-10719

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1953, v. 237, no. 1, p. 59-62.

Experimental results are presented which indicate that for a given test sample there exists a temperature or at least a very narrow temperature zone at the crossing of which one passes abruptly from one level of rupture energy to another. This phenomenon is due to the existence of a degree of elastic limit in soft steel which corresponds to a final plastic deformation under constant constraint.

## Light Metals

Martin, H. and Stedefeder, J.
THE DETERMINATION OF DIVALENT TITANIUM IN THE PRESENCE OF TRIVALENT TITANIUM. [1959] 7p.
Order from ATS $8.80 ATS-88L31G

Trans. of [Justus Liebigs] Ann[alen der Chemie] (West Germany) 1958, v. 618, p. 17-23.

Ostrovskiy, Yu. I. and Penkin, N. P.
RELATIVE f-VALUES OF THE SPECTRAL LINES OF SCANDIUM (Otnositel'nyye Chisla f-Spektral'nykh Liniy Skandiya). Oct 59 [8]p. 5 refs. RTS no. 1126.
Order from LC or SLA mi$1.80, ph$1.80 59-22165

Trans. of Optika i Spektroskopiya (USSR) 1957, v. 3, no. 4, p. 391-393.

The relative f-values of the spectral lines of Sc I were measured by D. S. Rozhdestvenskii's "hook" method (J. Phys. USSR 5: 319-337, 1941). Interferometric equipment (Izvest. Akad. Nauk SSSR Ser. Fiz. 5: 635, 1941; Optika i Spektroskopiya 1: 821, 1956) including a King type high temperature vacuum furnace was used. Scandium oxide ($Sc_2O_3$) was placed in a spindle-shaped graphite tube serving as the heating element of the furnace. The "Hooks" were photographed at temperatures ranging from 2500° to 30,000°K in the second order spectrum of a diffraction spectrograph with a

dispersion of the order of 4A per 1 mm. In the 3000- to 6400-A range the "hooks" near 33 absorption lines of scandium were suitable for measurement; of these, 22 lines belong to 9 mulitplets starting from the normal ground level $a^2D$, and the other 11 lines belong to 4 multiplets the lower levels of which are $a^4F$ (1.43 ev) and $a^2F$ (1.85 ev). Results are tabulated. The combination L - S occurs in the scandium atom.

## Structural Metallurgy and Corrosion

Asano, Eiichiro.
THE INFLUENCE OF COMPOSITIONS, TEMPERATURE, TIME AND RESIDUAL STRESS ON HIGH TEMPERATURE AGE-HARDENING. Pt. 1 of Study on Heat-Resisting Steel. [1959] [15]p. 3 refs.
Order from SLA mi$2.40, ph$3.30 60-10295

Trans. of Tetsu to Hagane (Japan) 1952, v. 38, no. 5, p. 51-56.

The age-hardening phenomena of Timken 16-25-6, the heat-resisting alloy for gas turbine material, were studied by determination of hardness and microstructure. There were three different per centage components in the specimens. The contents of carbon were of two kinds, 0.20% and 0.06%. The contents of molybdenum were of three kinds, 6%, 3% and none. Ni, Cr, Si, and Fe (balance) were kept unchanged. The materials were melted by high-frequency furnaces and then hot forged to bar. The solution treatment was done at 1150°C (2100°F), for 1 hour. Then the materials were aged at high temperature (700, 800, and 900°C or 1290, 1470, and 1650°F), from 15 minutes to 50 hours. 5% Mo specimens, which were either of 0.20% C or 0.06% C, had two peaks of hardness, and the latter was harder after 50 hours aging, especially at 800°C (1470°F). It seemed that the first peak of hardness mainly depended on some carbon condition, and the second peak of hardness mainly depended on some molybdenum condition. 3% Mo specimens were not as hard even after 50 hours aging, as compared with the 6% Mo specimens. When the specimens were aged, precipitation in microstructure was observed simultaneously. The specimens containing no Mo were not aged even at high temperature, either in hardness or microstructure. (Author) (See also 60-10297)

Asano, Eiichiro.
THE INFLUENCE OF SOLUTION TREATMENT ON GRAIN-SIZE AND HIGH TEMPERATURE AGE-HARDENING. PT. 2 OF STUDY ON HEAT-RESISTING STEEL. [1959] 13p. (1 table omitted).
Order from SLA mi$2.40, ph$3.30 60-10296

Trans. of Tetsu to Hagane (Japan) 1952, v. 38, no. 6, p. 29-33.

The influence of time and temperature of solution treatment on hardness, microstructure, and aged hardness was studied. The samples of Timken 16-25-6 alloy of two kinds of carbon content, and three kinds of molybdenum content, were solution treated at 1150°C for 1 to 10 hours, and their hardness and grain structure were observed immediately after water-quenching and also after aging at 800°C for up to 50 hours. A detailed test was done with the solution treatment temperature and time at 1100°C, 1150°C, 1200°C, and 1250°C, respecting each temperature for 30 minutes, 1 hour, and 3 hours, aging temperature being also at 800°C. In general, the higher heating temperature resulted in lower hardness, rougher grain-size, and greater degree of mixing grain-size. But, if they were at 800°C for 50 hours, all the specimens reached approximately the same hardness. The data indicates that, to study the influence of time and temperature of solution treatment, the observation of grain structure and size was more appropriate than that of aged hardness. And the solution treatment at 1100°C or 1150°C was suitable for 30 minutes to 1 hour, and at 1200°C for 30 minutes. (See also 60-10295)

Bastien, Paul and Amiot, Pierre.
INFLUENCE OF HYDROGEN INTRODUCED INTO STEELS ON THE PHENOMENA OF DELAYED FRACTURE, tr. by J. A. Muckleroy. [1959] 4p. 9 refs.
Order from SLA mi$1.80, ph$1.80 60-10715

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1955, v. 241 [no. 24] p. 1760-1762.

A steel is less sensitive to hydrogen embrittlement as its structure approaches physiocochemical, structural, and mechanical equilibrium. This primary role of structure is found in the phenomena of delayed fracture in the presence of atomic hydrogen. One variable is the order in which the metal is saturated with hydrogen and placed under mechanical stress. (Author)

Bastien, Paul and Amiot, Pierre.
MICROGRAPHIC STRUCTURE OF STEEL AND HYDROGEN EMBRITTLEMENT, tr. by J. A. Muckleroy. [1959] 3p. 4 refs.
Order from SLA mi$1.80, ph$1.80 60-10586

Trans. of Academie des Sciences, [Paris]. Comptes Rendus (France) 1954, v. 238 [no. 21] p. 2238-22[39].

Hydrogen was electrolytically introduced into a chromium-molybdenum steel (with composition C = 0.26%, Cr = 1.02%, and Mo = 0.30%), under conditions such that in all cases the quantity of diffused gas was about 2 cubic centimeters per 100 grams, verified by vacuum extraction at 600°C. The micrographic structure of a steel became less sensitive to hydrogen embrittlement as its plastic properties improved. Pearlites, and among these those with coalesced carbides, were among the least affected by the introduction of hydrogen. Additional tests, in addition, showed that the situation was the same with sorbites having dispersed and coalesced fine carbides. Hydrogen embrittlement depends on temperature: it passes through a maximum below ambient temperature, except for martensite which has been tempered at 550°C, for which the maximum would appear to be between +15° C and +100° C. Hydrogen embrittlement is zero at the temperature of liquid nitrogen (-196°C); it reappears, moreover, if the temperature of the metal, at the moment of plastic deformation, is raised above -110° C.

Herenguel, Jean and Lelong, Pierre.
CORROSION IN WATER OF MONOCRYSTALLINE ALUMINUM OF HIGH PURITY, tr. by Myra Scott. [1959] 3p. 6 refs.
Order from LC or SLA mi$1.80, ph$1.80 AEC-tr-3677

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1958, v. 246, no. 17, p. 2481-2484.

We have continued our studies on aluminum by testing monocrystals of A9(99.99) and we have also observed with them the phenomenon of growth varying according to the crystalline orientation and speed of corrosion. We have also found during the course of the tests, the formation of a compact homogeneous film with uniform thickness, and pitted with random penetrations toward the interior of the metal. The attack by pitting was followed by a uniform attack; began on the lattice. If the attack is continued sufficiently long, it always leads to the formation of depressions, more like the general pitting they produced previously. The growth not only started with the appearance of the pitting, but also developed at the same time. It is produced likewise in the case of the corrosion in depressions. The role played by the grain boundaries in the growth of the polycrystalline material is not therefore essential. Every increase of resistance to the flow of the metal contributes to the amelioration of its behavior to corrosion at a high temperature. (Extracted from the report)

Herzog, Eugène.
INFLUENCE OF THE STRUCTURE OF MILD STEELS ON THEIR BRITTLENESS UNDER TENSION, IN HYDROGEN SULFIDE, tr. by J. A. Muckleroy. [1959] 3p. 6 refs.
Order from SLA mi$1.80, ph$1.80 60-10716

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1955, v. 241 [no. 17] p. 1129-1130.

When alloyed or slightly alloyed steels are simultaneously subjected to corrosion testing in hydrogen sulfide and to tensile testing near the elastic limit, the time before rupture varies over a wide range with the structure of the steels. (Author)

Kühn, M[artin].
NOVEL RUSTPROOF COATINGS: THEIR THEORETICAL BASIS AND PRACTICAL OUTLOOK, tr. by P. M. M. 5 Dec 56, 20p. 44 refs.
Order from SLA mi$2.40, ph$3.30 60-10429

Trans. of Farbe und Lack (West Germany) 1955, v. 61, no. 12, p. 552-561.

Coatings considered include aqueous alkaline phosphonate solutions, the condensation products with benzaldehyde, crotonaldehyde and furfural, and the sulfonamides.

Pfefferkorn, G.
ELECTRON MICROSCOPE INVESTIGATION OF THE STRUCTURE OF METAL CORROSION LAYERS AND ADHESIVE DEPOSITS. 1959.
Order from BISI £5 5s BISITS-1448

Trans. of V[ereinigung der] G[rosskesselbesitzer]. Mitt[eilungen] (West Germany) 1958, Dec, p. 375-381.

Iron and copper on oxidation form a circular growth normal to the surface. The structure of these deposits, their mechanism of formation and their mode of growth with temperature are discussed. The black deposits in boiler tubes are examined and shown to be of similar constitution. The fibre structures form filter media upon which other materials are already deposited, and may show catalytic activity. (J. Iron Steel Inst. abstract)

## NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

*ATOMNAYA ENERGIYA (USSR) 1959, V. 7, NO. 3, P. 205-308 (Atomic Energy). [1959] 1v. SOV-89-7-3-(1-29)/29.
Order from OTS $0.60, $3.50/6 mo. PB 141 082T-23
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

THE SOVIET JOURNAL OF ATOMIC ENERGY, 1958, VOL. 5, NO. 5, P. 1411-1531. 1959, 1v.
Order from CB $20.00, $75.00/year

Trans. of Atomnaya Energiya (USSR) 1958, v. 5, no. 5, p. 501-[600].

Gamboa, J. M.
APPLICATIONS OF RADIOISOTOPES TO PHYSICAL-CHEMICAL INVESTIGATIONS (Aplicaciones de los Isotopos Radiactivos en la Investigacion Fisico-quimica). [1959] 48p. 36 refs. (foreign text included).
Order from LC or SLA mi$3.30, ph$7.80 AEC-tr-3719

Trans. of Energia Nuclear (Spain) 1957, v. 1, no. 3, p. 53-66.

Grass, Günther.
THE IMPROVEMENT OF HEAT TRANSFER TO WATER DERIVABLE FROM THE ARTIFICIAL ROUGHENING OF SURFACES IN REACTORS OR IN HEAT EXCHANGES, tr. by G. Dessauer. [1959] [9]p. 8 refs.
Order from LC or SLA mi$1.80, ph$1.80 AEC-tr-3641

Trans. of Atomkernenergie (West Germany) 1958, v. 3, p. 328ff.

Heat transfer and pressure drop in tubes were investigated for different degrees of surface roughness. The effect of surface roughness on both of these quantities is about the same. By using artificially roughened surfaces, it is possible to build heat exchangers whose effectiveness is two to three times larger than that of a heat exchanger with smooth surfaces. (Author)

Gratreau, P. and Maisonnier, Ch.
SPACE CHARGE THEORY IN A BETATRON (Théorie de la Charge d'Espace dans le Betatron) [1959] 27p. 3 refs. (foreign text included). CEN. S. PA 7738.
Order from LC or SLA mi$2.70, ph$4.80 AEC-tr-3708

Trans. of Commissariat a l'Energie Atomique [Rapport] (France) 26 Apr 58, no. CEN. S. PA 7738.

Calculations are presented on the equilibrium condition of a toric beam, the charge density, and limit conditions.

Guidini, J.
EXPERIMENTAL STUDY OF A PULSE SYSTEM ION GUN. 23 Dec 58, 40p. (foreign text included)
Order from LC or SLA mi$3.00, ph$6.30 AEC-tr-3525

Trans. of mono Étude Experimentale d'un Canon à Ions Fonctionnant en Régime Plusé, 1958, Cen. S. Pa. 7969.

A high-frequency impulse gun capable of producing a 10- to 12-ma proton beam is examined. The ion gun can be adapted on the Van de Graaf-Saturn injection. The source is concluded to comprise about 50 hours of stable operation. (See also 59-14749)

## Nuclear Reactions

Artsimovich, L. A.
RESEARCH OF CONTROLLED THERMONUCLEAR REACTIONS IN THE USSR (Issledovaniya po Upravlyayemym Termoyadernym Reaktsiyam v SSSR) tr. by A. L. Monks. 28 July 59, 24p. (foreign text included).
Order from LC or SLA mi$2.70, ph$4.80 AEC-tr-3772

Trans. of Akad[emiya] Nauk SSSR. Vestnik, 1959, v. 29, no. 1, p. 11-23.

Dobrokhotov, E. I.
THE PROBLEMS OF CONTROLLING THERMONUCLEAR PROCESSES (Problemy Upravleniya Termoyaderny m i Protsessami) tr. by A. L. Monks. 17p. (foreign text included).
Order from LC or SLA mi$2.40, ph$3.30 AEC-tr-3769

Trans. of Priroda (USSR) 1959, v. 48, no. 1, p. 103-108.

The work of the two main sections of the Second International Conference of the United Nations of the Peaceful Uses of Atomic Energy, held in September, 1958, in Geneva is discussed.

## Radioactivity

Canals Cramp, Xavier.
RADIOACTIVITY OF BARCELONA DRINKING WATER (Radiactivdad de las Aguas Potables de Barcelona). [1959] [13]p. (4 figs. omitted) 2 refs.
Order from SLA mi$2.40, ph$3.30 60-10741

Trans. of [Sociedad Española de Fisica y Quimica. Anales] 1945, v. 41, p. 414-423.

Inthoft, W. and Zimen, K. E.
KINETICS OF THE DIFFUSION OF RADIOACTIVE RARE GASES FROM SOLID SUBSTANCES AFTER IRRADIATION. Rept. no. 2 on Rare Gas Diffusion in Solids. [1959] [11]p. 9 refs.
Order from LC or SLA mi$2.40, ph$3.30 AEC-tr-3289

Trans. from [Chalmers Tekniska Högskola, Gothenburg. Handlingar] (Sweden) 1956, no. 176.

The kinetics of the diffusion of radioactive raregases out of condensed phases, especially solids, are considered. Equations are given for the fractions of the radioactive gas in and outside the solid phase as a function of time for the cases of spheres, cylinders and rectangular parallelepipeds. An approximation for short times (compared to the half-time of the diffusion) is derived which makes it possible to evaluate such diffusion experiments in practice. The boundary effect by the recoil during irradiation is considered as well as the boundary effect by diffusion at room temperature before measurement.

Laboulage, H. de, Tzara, C., and Olkowsky, T.
PROBABILITY OF TRIPLE FISSION WITH A THIRD FRAGMENT OF SHORT PATH LENGTH. Sect. 4 of Study of Uranium Fission with an Automatic Wilson Cloud Chamber. [Quelgues Études sur la Fission de l'Uranium a l'Aide d'une Chambre de Wilson Autocommandee. Sec. 4. Probabilite de Production de Tripartitions a Troisieme Fragment de Court Parcours]. [1959] 14p. (12 figs. 20 refs. omitted) 20 refs.
Order from LC or SLA mi$2.40, ph$3.30 AEC-tr-3712

Trans. of [Journal de Physique et le Radium] (France) 1954, v. 15, p. 477-482.

A result of 1 ±3 tripartitions s. p./1000 fissions was obtained.

Moessbauer, Rudolf L.
THE NUCLEAR RESONANCE GAMMA-RAY FLUORESCENCE IN $Ir^{191}$. [1959] 30p. 26 refs.
Order from LC or SLA mi$2.70, ph$4.80 AEC-tr-3685

Trans. of Zeitschrift für Physik (West Germany) 1958, v. 151, p. 124-143.

The nuclear resonance absorption of the 129 kev gamma radiation that follows the radioactive decay of $Os^{191}$ is examined. The capture cross section for the resonance absorption is measured as a function of the temperatures of the source and absorber in a temperature region of $90^{o}K < T < 370^{o}k$. The life time $T_{\gamma}$ of

the 129-Kev level in $Ir^{191}$ is proved to be $(3.6^{+1.3}_{-0.8})10^{-10}$ sec. The absorption cross section shows a marked increase at low temperatures as a result of the crystal bond of the absorber and preparation of slow neutrons in crystals is applied to the nuclear resonance absorption of gamma radiation. At low temperatures, there is evinced a strong dependence of the capture cross section for the nuclear absorption upon the frequency distribution in the solid's oscillation spectrum. (Author)

## PHYSICS

BULLETIN OF THE ACADEMY OF SCIENCES OF THE USSR. PHYSICAL SERIES, 1958, VOL. 22, NO. 10, P. 1147-1284. 1959, 1v.
Order from CTT $20.00, $215.00/year

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Fizicheskaya, 1958, v. 22, no. 10, p. 1159-[1292].

*ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI (USSR) 1959, V. 37 (Journal of Experimental and Theoretical Physics). [1959]
Order from OTS $1.40, $7.50/6 mo.
Foreign $1.65, $9.00/6 mo.

No. p, p. 3-320, PB 141 052T-18
No. 2(8), p. 333-588, PB 141 052T-19

Consists of abstracts in English.

Belov, K. P.
ELECTRICAL AND THERMOELECTRICAL PHENOMENA IN FERROMAGNETIC MATERIALS. [1959] [59]p. 90 refs. F-TS-9837/V.
Order from LC or SLA mi$3.60, ph$9.30 59-19506

Trans. of mono. Elektricheskiye i Termoelektricheskiye Yavleniya v Ferromagnetikakh, Moscow, 1957, 2ed., chap. 5, p. 212-262.

Discussions are presented on: (1) electrical and thermoelectrical phenomena governed by magnetic and exchange forces, (2) the dependency of electroconductivity and of the thermoelectromotive force on the direction of spontaneous magnetization, (3) galvanomagnetic and thermomagnetic effects in the domains of rotation and displacement, (4) the galvanomagnetic effect in the region of the para process, (5) odd galvano- and thermomagnetic effects, (6) galvano- and thermoelastic effects, (7) anomalous electrical properties, (8) the investigation of electrical and galvanomagnetic phenomena in ferromagnetic semiconductors, and (9) application of measurements of galvano- and thermomagnetic effects in studies of the structural composition of magnetic materials.

Kulikovskiy, A. G. and Dyubimov, G. A.
ON POSSIBLE TYPES OF DISCONTINUITIES WITH CONDUCTION. [1959] 3p. 3 refs.
Order from MDF $2.00 MDF K-193

Trans. of A[kademiya] N[auk] SSSR. O[tdeleniye] T[ekhnicheskikh] N[auk]. Izv[estiya]: Mekh[anika] i Mash[inostroyeniye] 1959, no. 4, p. 130-131.

## Acoustics

Frieser, H. and Pistor, W.
THE CALLIER EFFECT AS A SOURCE OF ERROR IN SOUND FILMS. [1959] 2p. 1 ref.
Order from SLA mi$1.80, ph$1.80 60-10196

Trans. of die Kinotechnik (Germany) [1940] no. 22, p. 601.

Goetz, J.
SOUND TRANSMISSION THROUGH A METAL PLATE IN LIQUID OF A PLANE WAVE AT OBLIQUE INCIDENCE. [1959] 55p. (1 fig. omitted) 30 refs.
Order from LC or SLA mi$3.60, ph$9.30 AEC-tr-3638

Trans. of Akustische Zeitschrift (Germany) 1943, v. 8, p. 145-168.

Transverse wave coincidence theory was applied to sound transmission through metal plates in liquids. The plate vibration was represented as a transverse wave, taking into account inertia and shearing deformation. Transverse wave velocity was determined by using two-dimensional wave theory. The thickness resonance in a boundary wall with no shear stress was represented as coincidence. The maximal sound transmissivity at excitation of the free tangential wave of a separating layer with no shear stress was theoretically demonstrated for fixed separating walls. Experiments with a sound transmitter on one side of a rotatable iron plate and a receiver on the other side, all immersed in water to which an added wetting agent was added, were made which showed that observed total transmissions (e.g., those of F. H. Sanders reported in Canadian J. Research A 17: 179-93, 1939) can be explained as coincidence with a single tangental wave velocity.

Rosler, R.
THEORETICAL INVESTIGATIONS OF THE DEPENDENCE OF THE VELOCITY OF SOUND IN SOLIDS UPON PRESSURE. [1959] 9p.
Order from ATS $8.50 ATS-17L34G

Trans. of Beitr[äge zur] Geophysik (East Germany) 1958, v. 68, no. 1, p. 21-30.

## Electronics

Epstein, Paul S.
THEORY OF SPACE CHARGE PHENOMENA. [1959] 12p. 7 refs.
Order from LC or SLA mi$2.40, ph$3.30 AEC-tr-3725

Trans. of Deutsche Physikalische Gesellschaft. Berichte (Germany) 1919, v. 21, p. 85-99.

Maeda, Haruo.
WAVE FORM OBSERVATION OF ELECTRON CURRENT USING TRAVELING-WAVE CATHODE-RAY TUBES. Thesis no. 2946. [1959] 23p. 4 refs. CCT-1634.
Order from LC or SLA mi$2.70, ph$4.80 AEC-tr-3654

Trans. of Denki Tsushin Gakkai Zasshi (Japan) 1957, v. 40, no. 11, p. 1171-1177.

The preliminary considerations and the practical use of the traveling-wave cathode-ray tube are described. The anode currents in a VHF beam tetrode operating at 100 Mc are observed by the experimental cathode-ray tube made for the previous study. The effects on the observed oscillogram by the termination of the deflecting line are shown. Some typical bunched electron currents in a velocity modulated beam, which have been only estimated by the electron ballistic theory, are experimentally observed for the first time by oscillograms. As a result, the high-frequency oscillography, concerning the electron current observation described in this report, shows the possibility of profitable use of the traveling-wave cathode-ray tube for experimental study of the microwave tube's operation. (Author)

Matricon, M. and Trouvé, S.
DISTRIBUTION ON SPACE CHARGE IN EMISSION TUBES [Etude sur la Repartition de la Charge d'Espace dans les Tubes d'Emission]. [1959] 23p. 5 refs.
Order from LC or SLA mi$2.70, ph$4.80 AEC-tr-3771

Trans. of l'Onde Électrique (France) 1950, v. 30 [no. 285] p. 510-521.

Approximate formulas are established for the value of the electron current emitted by the cathode as a function of the anode voltage, for cathode structures of practical importance. In the case of a cylindrical cathode filament parallel but not coaxial with the anode, an experimental verification was made.

## Molecular Physics and Spectroscopy

*OPTIKA I SPEKTROSKOPIYA (USSR) 1959, V. 7, NO. 3, P. 285-436 (Optics and Spectroscopy). [1959] 1v. SOV-51-7-3-(1-21)/21.
Order from OTS $0.70, $4.00/6 mo. PB 141 047T-21
Foreign $0.95, $5.50/6 mo.

Consists of abstracts in English.

Babayeva, A. V. and Lapir, E. S.
SPECTRAL DETERMINATION OF IRIDIUM, PLATINUM AND PALLADIUM IN REFINED RHODIUM (Spektral'noye Opredeleniye Iridiya Platiny i Palladiya v Affiniro-vannom Rodii) tr. by G. Belkov. 1959, 7p. 4 refs. Technical Trans. 825.
Order from NRCC NRC TT-825

Trans. of Akad[emiya] Nauk SSSR. Sektor Platiny i Drug[ikh] Bla[g]orod[nykh] Metal[lov]. Izvest[iya] 1948, no. 22, p. 145-148.

A method was developed for quantitative spectrographic determination of the companions of rhodium, particularly iridium, when the iridium is contained in quantities of 0.5 to 0.001%.

Babayeva, A. V. and Lapir, E. S.
SPECTRAL DETERMINATION OF SMALL QUANTITIES OF PLATINUM AND PALLADIUM IN REFINED SILVER (Spektral'noye Opredeleniye Malykh Kolichesty Platiny i Palladiya v Affinirovannom Serebre) tr. by G. Belkov. 1959, 7p. 5 refs. Technical trans. 826.
Order from NRCC NRC TT-826

Trans. of Akad[emiya] Nauk SSSR. Sektor Platiny i Drug[ikh] Bla[g]orod[nykh] Metal[ov]. Izvest[iya] 1949, no. 23, p. 97-100.

Bues, W.
RAMAN SPECTRA OF LITHIUM, SODIUM, POTASSIUM AND SILVER NITRATE MELTS. [1959] 31p. (11 tables 7 figs. omitted) 40 refs.
Order from LC or SLA mi$3.30, ph$6.30 AEC-tr-3707

Trans. of Z[eitschrift für] Physik[alische] Chemie [Frankfurt] (West Germany) 1957 [Neue Folge] v. 10, p. 1-23.

Raman spectra of alkali and silver nitrate fusions are recorded with an equipment (Z. anorg. u. allgem. Chem. 279: 104, 1955) suitable for salt fusions. Discussion of the spectra shows that ions are present in the fusions. The cation influence in the spectra of fusions and crystals cannot be explained in the alkali nitrates only by differences in packing densities. In contrast to the silver ion, the alkali ions do not exert any influence on the NO linkage force in the nitrate ion. As a connecting link between crystal and solution spectra, the fusion spectra permit us to make statements on the state of the nitrate ion in aqueous solution. Thermodynamic data confirm the assumption of ion fusions for the salts observed. (Author)

## Solid State Physics

*KRISTALLOGRAFIYA [MOSCOW] (USSR) 1959, VOL. 4, NO. 3, P. 279-459. (Crystallography).
[1959] 1v. SOV-70-4-3-(1-32)/32.
Order from OTS $0.70, $4.00/year PB 141 065T-9
Foreign $0.95, $5.50/year

Consists of abstracts in English.

Lushchik, Ch. B. and Moskvin, A. V.
CONFERENCE ON LUMINESCENCE (CRYSTAL PHOSPHORS) NO. 7, tr. by Lydia Venters.
July 59, 9p.
Order from LC or SLA mi$1.80, ph$1.80
AEC-tr-3780

Trans. of *Optika i Spektroskopiya (USSR) 1959, v. 6, no. 1, p. 122-124.
Another translation is available from LC or SLA mi$1.80, ph$1.80 as 59-14903, LL TL-14, 19 Mar 59, 4p

Principal topics are given for the more than 100 papers read at 4 plenary and 14 sectional meetings of the conference held in Moscow from June 26 to July 3, 1958.

Semiletov, S. A. and Man, L. I.
ELECTRON DIFFRACTION STUDIES OF THE STRUCTURE OF THIN $TlBiSe_2$ AND $TlSbS_2$ FILMS.
Oct 59, 9p. 8 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-10570

Trans. of *Kristallografiya (USSR) 1959, v. 4, no. 3, p. 414-417.

For $TlBiSe_2$ specimens diffraction photographs with a small number of diffuse lines and photographs with a large number of clearly defined lines were obtained. The Debye patterns obtained for $TlBiSe_2$ show reflections which correspond to the strongest rings of the second kind. Diffraction photographs of the first kind were identified on the basis of a cubic face-centered cell with the period a=6.18±0.02A ($NH_4Cl$ standard). In accordance with the pycnometric density (8.25g/$cm^3$) there are two formula units per elementary cell, i.e., four Se atoms, two Bi atoms, and two Tl atoms. A simple analysis of the intensity of refelctions on the electron diffraction photographs of the cubic modification of $TlBiSe_2$ (all reflections with even indices are strong, odd indices are weak) shows that it belongs to the NaCl type structure and that due to absence of twofold sites in the respective space groups, the Tl and Bi atoms must be distributed statistically. Electron diffraction photographs from $TlSbS_2$ films show oblique textures; measurements of the electron diffraction photographs from different specimens give values from 5.87 to 5.94± 0.02A ($NH_4$ Cl standard) for period a which are dependent on fluctuations of the chemical composition of the given phase. The extinctions observed in this case also correspond to the face-centered cell. Results corroborate the existence of a whole group of ternary semiconductor compounds with the NaCl type structure. This group includes primarily $A^{II}B^{V}X^{VI}_2$ compounds, i.e., compounds composed of elements of the I and V group of the periodic system with S, Se, and Tl.

Tauc, Jan and Matyas, Milos.
THE ELECTRIC AND THERMOELECTRIC PROPERTIES OF INDIUM ANTIMONIDE. [1959] 27p.
Order from LC or SLA mi$2.70, ph$4.80 AEC-tr-3510

Trans. of Chekhoslov[atskii] Fiz[icheskii] Z[hurnal] (Czechoslovakia) 1955, v. 5 [no. 3] p. 369-383.

The results of the measurings of electric conductivity, Hall coefficient and thermo-electric powers were obtained on 4 samples of InSb, two of which were of the type N and two of the type P in the range of temperatures from -180° to +400°C. Comparison with the theory showed that the electronic gas in InSb degenerates in many temperature ranges and at higher temperatures a thermal distribution of the electrons on the atoms of the lattice prevails; the effective mass of the electrons $M_n/m = 3.6 \cdot 10^{-3}$ was determined, a constant throughout the interval of temperatures. This translation appeared previously in TT, v. 2, p. 213 erroneously identified as AEC-tr-3512.
(Physics--Solid State)

Tolstoy, N. A. and Feofilov, P. P.
STUDYING THE DECAY OF LUMINESCENCE WITH A CATHODE OSCILLOGRAPH. [1959] 6p. 8 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-10568

Trans. of Akademiya Nauk SSSR. Doklady, 1947, v. 58, no. 3, p. 389-392.

Some methods of a quantitative study of the decay of luminescent materials are discussed for decay times within the limits of $10^{-1}$ to $10^{-5}$ second, that is, within the range in which the Becquerel phosphoroscope can be used. (Author)

Vaynshteyn, B. K.
NEW TYPE OF RELATION BETWEEN STRUCTURE FACTORS. Oct 59, 21p. 10 refs.
Order from LC or SLA mi$2.70, ph$4.80 60-10569

Trans. of *Kristallografiya (USSR) 1959, v. 4, no. 1 p. 3-12.

Exact equalities which for certain conditions relate structure factors of parallel gratings of the reciprocal latice are derived. These equalities are valid in the general case when the symmetry center is absent and for structures composed of any kind of atoms. In a general case the equalities convert to inequalities which are evaluated quantitatively. (Author)

## Theoretical Physics

Ardenne, M. von, Schiller, S., and Westmeyer, H.
PLASMA INVESTIGATIONS WITH A SMALL DIAMETER ELECTRON IRRADIATION DETECTOR. [1959] 27p. 24 refs.
Order from LC or SLA mi$2.70, ph$4.80 AEC-tr-3619

Trans. of Experimentelle Technik der Physik (East Germany) 1958, v. 6, p. 49-62.

The fairly complex plasma of the model of a unoplasmatron ion source with an artificially increased cathode fall is investigated by means of an electron irradiation detector with a very small diameter. The 35-kilovolt electron ray of a precision electron ray oscillograph serves as the electron irradiation detector. By relative motions of the discharge with respect to the electron irradiation detector the plasma field strength values are measured in the space between the cathode fall range and the anode. The deflections observed and deformations of the focal spot by plasma oscillation fields are discussed. A mathematical interrelationship between the degree of orientation of the plasma oscillations and the plasma field strength gradient is revealed. (Author)

Podlyasky, I.
MACROSCOPIC ASPECT OF BRIEF AND INTENSE DISCHARGES IN GASES (Aspect Macroscopique des Décharges Breves et Intenses dans les Gaz). [1959] 23p. 2 refs. (foreign text included). IP-15.
Order from LC or SLA mi$2.70, ph$4.80 AEC-tr-3693

Trans. of Commissariat a l'Énergie Atomique. [Rapport] (France) no. IP-15, 14 Dec 56.

## Thermodynamics

Lykov, A. V.
HEAT AND MASS TRANSFER IN DISPERSE MEDIA WITH PHASE CHANGES. [1959] 9p.
Order from ATS $12.95 ATS-05L34R

Trans. of Inzhenerno-Fiz[icheskiy] Zhur[nal] (USSR) 1958, v. 1, no. 6, p. 12-19.

Ruckenstein, E.
ON HEAT TRANSFER IN REACTORS. [1959] 5p. 1 ref. CCT-1688.
Order from LC or SLA mi$1.80, ph$1.80 AEC-tr-3609

Trans. of Acad[emia] Rep[ublicii] Populare Romine. Inst[itutul de] Fiz[ica]. Studii [si] Cercetari [de] Fiz[ica] (Rumania) 1956, v. 7, no. 1, p. 63-66.

Previous studies (Studii si Cercetari de Fizica 5: 123-134, 1954) were extended by establishing an approximate expression for temperature when the derivative of the chemical reaction rate with respect to time is unequal to zero and $T_0$(sic) is a constant.

Vukalovich, M. P., Zubarev, V. N. and others.
EXPERIMENTAL DETERMINATION OF THE SPECIFIC VOLUMES OF WATER UP TO 1200 $kg/cm^2$ PRESSURES. [1959] 6p. 8 refs.
Order from MDF $3.00 MDF V-139

Trans. of Teploenergetika (USSR) 1959, v. 6, no. 10, p. 74-77.

Experimental data are presented on the specific volumes of water up to pressures of 1200 kg/sq cm and 300° C temperature and these data are compared with the results of other investigations. (Author)

## RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

AKADEMIYA NAUK SSSR. DOKLADY, 1959, V. 127, (Reports of the Academy of Sciences of the USSR). [1959]
Order from OTS $1.40, $20.00/6 mo.
Foreign $1.65, $24.50/6 mo.

No. 3, p. 487-727, PB 141 015T-43
No. 4, p. 735-936, PB 141 015T-44

Consists of abstracts in English.

NAUKA I ZHIZN' (USSR) 1959, [V. 26] NO. 8, P. 1-80 (Science and Life) [1959] 1v. SOV-25-59-8-(1-48)/48.
Order from OTS $0.70, $4.00/6 mo. PB 141 020T-18
Foreign $0.95, $5.50/6 mo.

Consists of abstracts in English.

SCIENTIFIC INFORMATION REPT. 18 Dec 59, 121p.
Order from OTS $2.75, $28.00/year PB 131 891T-36

Consists of unevaluated information extracted from publications of USSR and Eastern Europe.

SCIENTIFIC INFORMATION REPT. 1 Jan 60, 86p.
Order from OTS $2.75, $28.00/year PB 131 891T-37

Consists of unevaluated information extracted from publications of USSR and Eastern Europe.

Bonnardel, R.
NEW RESEARCH ON A DIFFERENTIAL TEST OF ABSTRACT VERBAL COMPREHENSION (B. V-16) (Nouvelle Recherche sur un Test Differentiel de Comprehension Verbale Abstraite (B. V-16)). [1959] [17]p. 3 refs.
Order from SLA mi$2.40, ph$3.30 59-20866

Trans. of le Travail Humain (France) 1957, v. 20, no. 3/4, p. 339-349.

Lyalikov, K. S.
PROGRESS IN SOVIET ELECTROPHOTOGRAPHY; SCIENTIFIC-TECHNICAL CONFERENCE ON THE PROBLEMS OF ELECTROGRAPHY. [1959] 8p.
Order from LC or SLA mi$1.80, ph$1.80 60-10594

Trans. of Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii (USSR) 1959, v. 4, no. 2, p. 149-152.

Topics are noted of papers that were read at the scientific-technical conference organized (sic: held?) Dec 16 to 19, 1958 in Vilnius (Vilna, Lithuania).

## SOCIAL SCIENCES

STATISTICAL HANDBOOK OF THE USSR.
14 Oct 59, 18p. JPRS-L-1905-D.
Order from OTS $0.50 59-31017

Trans. of mono. SSSR v Tsifrakh: Statisticheskiy Sbornik, Moscow, 1958, p. 422-451.

Lipperheide, W.
SIMPLIFIED DETERMINATION OF VARIABLE OVERHEAD COSTS AS A FUNCTION OF THE DEGREE OF OCCUPATIONAL ACTIVITY. [1959] 4p. (5 figs. omitted).
Order from SLA mi$1.80, ph$1.80 59-20487

Trans. of Maschinenbau (Germany) 1940, v. 19 [no. 7] p. 303-304.

# BOOK REVIEWS

The following book reviews can be ordered by number from L. C. or SLA. Each review includes, in addition to the material shown, a detailed statement of the coverage of the book and a detailed table of contents. The length of each review is indicated at the end of the entry.

BR-SOV/2421
Gakhov, Fedor Dmitriyevich
KRAYEVYYE ZADACHI (Boundary Value Problems) Moscow, Fizmatgiz, 1958. 543p. Errata slip inserted. 4,500 copies printed. 9 p. Microfilm $1.80 Photocopy $1.80

BR-GER/2456
Gratsershteyn, I.M., and R. D. Malinova
ORGANISATION UND PLANUNG IN BETRIEBEN DER BUNTMETALLURGIE. BERLIN, VEB VERLAG TECHNIK, 1958. 413 p. Number of copies printed not given. 6 p. Microfilm $1.80 Photocopy $1.80.

BR-CZECH/2468
Klesl, Emil
RAKETOVE ZBRANE (Rocket Weapons) Praha, Nase vojsko, 1958. 273 p. (Series: Kniznice moderni vojenske techniky, sv. 1) 8,000 copies printed. 3 p. Microfilm $1.80 Photocopy $1.80

BR-CZECH/2479
Ferles, Miloslav and Josef Jizva
CHEMIE PYRIDINU (Chemistry of Pyridine) Praha, Nakladatelstvi Ceskoslovenska Akademie Ved, 1957. 617 p. (Series: Ceskoslovenska Akademie Ved. Sekce chemicka, sv. 21) Errata slip inserted. 1,300 copies printed. 6 p. Microfilm $1.80 Photocopy $1.80

BR-POL/2489
Minczewski, Jerzy, and Zygmunt Lada
MIARECZKOWANIE POTENCJOMETRYCZNE (Potentiometric Titration) Warzawa, Panstwowe Wydawnictwo Naukowe, 1957. 498p. Errata slip inserted. 2,015 copies printed. 7 p. Microfilm $1.80 Photocopy $1.80

BR-SLOV/2498
Bercik, Juraj, and Juraj Tolgyessy
POTENCIOMETRIA (Potentiometric Analysis) Bratislava, SVTL, 1957. 327p. 1,700 copies printed. 7 p. Microfilm $1.80 Photocopy $1.80

BR-CZECH/2501
Hala, Eduard, Jiri Pick, Vojtech Fried, and Otakar Vilim
ROVNOVAHA KAPALINA--PARA (Liquid--Vapor Equilibrium) Praha, Nakladatelstvi Ceskoslovenski Akademia Ved, 1955. 321 p. (Series: Ceskoslovenska Akademie ved. Studie a prameny. Sekce chemicka, sv. 10) Errata slip inserted. 38,600 copies printed. 1 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2504
Abramov, N N., N. N. Geniyev, and V.I. Pavlov
VODOSNABZHENIYE (Water-Supply Engineering) 3rd ed., rev. Moscow, Gosstroyizdat, 1958. 578 p. Errata slip inserted. 25,000 copies printed. 9 p. Microfilm $1.80 Photocopy $1.80

BR-POL/2512
ROCZNIK POLSKIEGO RADIA 1957 (1957 Yearbook of Polish Radio) Warszawa, Komitet do spraw radiofonii "Polskie radio," 1958. 207 p. 3,000 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SLOV/2519
Holan, Juraj
ODPADOVE PRODUKTY V HUTNICTVE; ICH DOPRAVA, SKLADOVANIE A ZUZITKUVANIE (Waste Products in Metallurgy; Transportation, Storage and Utilization) Bratislava, S.V.T.L., 1958. 183 p. 1,200 copies printed. Microfilm $1.80 Photocopy $1.80

BR-SOV/2537
Mel'nichuk, Petr Ivanovich
ISSLEDOVANIYE MODULYA UPRUGOSTI I TVERDOSTI STAREYUSHCHIKH SPLAVOV NA MEDNOY OSNOVE (Studying the Modulus of Elasticity and Hardness of Aging Copperbase Alloys) Kiyev, AN Ukrainskoy SSR, 1957. 42 p. 1,000 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2563
Akademiya nauk SSSR. Institut mashinovedeniya. Seminar po teorii mashin i mekhanizmov
TRUDY, TOM 18, VYP. 71 (Transactions of the Institute of Mechanical Engineering, Academy of Sciences, USSR. Seminar on the Theory of Machinery and Mechanisms, Vol 18, No. 71) Moscow, Izd-vo AN SSSR, 1958. 89 p. Errata slip inserted. 2,500 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2565
Akademiya nauk SSSR. Institut mashinovedeniya. Seminar po tochnosti v mashinostroyenii i priborostroyenii

TRUDY, VYP. 12 (Transactions of the Institute of Mechanical Engineering, USSR Academy of Sciences. Seminar on Accuracy in Machine and Instrument Building, Nr 12) Moscow, Izd-vo AN SSSR, 1959. 70 p. Errata slip inserted. 2,500 copies printed. 3 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2567
Chelobov, Nikolay Alekseyevich[Deceased]; Petr Grigor'yevich Petrukha; Vladimir Georgiyevich Bovin; Mikhail Antonovich Myakishev; and Tat'yana L'vovna Buyanova
RUKOVODSTVO K LABORATORNYM RABOTAM PO KURSU "METALLOREZHUSHCHIYE STANKI" (Laboratory Manual for the Course in "Metal-cutting Machine Tools") Moscow, Oborongiz, 1959. 142 p. (Series: Moscow. Aviatsionnyy institut imeni Sergo Ordzhonikidze) Errata slip inserted. 16,000 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2573
Stepanov, Boris Mikhaylovich
RADIOLOKATSIONNYY OBZOR (Radar Scanning) Moscow, Voyen. izd-vo M-va obor. SSSR, 1959. 64 p. (Series: Radiolokatsionnaya tekhnika) No. of copies printed not given. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2586
Andreyev, Petr Nikolayevich and Zaryanov, Nikolay Vasil'yevich
TEKHNIKA RAZBORNYKH LAMP (Technology of Demountable Tubes) Moscow, Svyaz'izdat, 1959. 111p. Errata slip inserted. 8,400 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-POL/2588
Zonn, Wlodzimerz
EWOLUCJA GWIAZD (The Evolution of Stars) Warszawa, PWN, 1958. 270 p. (Series: Biblioteka problemow) Errata slip inserted. 5,200 copies printed. Ed.: B. Wroblewska. 2p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2594
Akademiya nauk SSSR. Institut mashinovedeniya. Seminar po tochnosti v mashinostroyenii i priborostroyenii
TRUDY, VYP. 8 (Transactions of the Institute of Mechanical Engineering, Academy of Sciences, USSR. Seminar on Accuracy in Machinery and Instrument Design; No. 8) Moscow, Izd-vo AN SSSR, 1955. 78p. 1,800 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2599
Grishin, B. S.
VYSOKOTOCHNYYE OPTICHESKIYE TEODOLITY (High-Precision Optical Theodolites) 2d ed., enl. Moscow, Geodezizdat, 1959. 147 p. Errata slip inserted. 3,000 copies printed. 5 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2604
Baranovskiy, Petr Grigor'yevich
NASTROYKA AVTOMATICHESKIKH REGULYATOROV V METALLURGICHESKOY PROMYSHLENNOSTI (Adjustment of Automatic Controllers in the Metallurgical Industry) Sverdlovsk, Metallurgizdat, 1959. 128 p. Errata slip inserted. 4,000 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2610
Akademiya nauk Ukrayins'koyi RSR. Instytut mashynoznavstva ta avtomatyky
DYAKI PYTANNYA FIZYKO-KHIMICHNOYI MEKHANIKY METALIV (Physical, Chemical, and Mechanical Properties of Metals) Kyyiv, 1958. 142 p. 1,000 copies printed. 3 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2611
Vol'kenshteyn, Mikhail Vladimirovich
KONFIGURATSIONNAYA STATISTIKA POLIMERNYKH TSEPEY (Configuration Statistics of Polymeric Chains) Moscow, Izd-vo AN SSR, 1959. 466 p. 6,000 copies printed. 4 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2612
Trofimov, Viktor Ivanovich
ISSLEDOVANIYE I RASCHET ELEMENTOV STALNYKH OPOR LINIY ELEKTROPEREDACHI (Investigation and Design of Elements of Supporting Structures for Transmission Lines) Moscow, Gosenergoizdat, 1959. 101 p. Errata slip inserted. 5,300 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2615
Batyushkova, Irina Vasil'yevna
PREDSTAVLENIYA O PRICHINAKH ZEMLETRYASENIY V RABOTAKH OTECHESTVENNYKH UCHENYKH (Ideas on the Causes of Earthquakes as Expressed in the Works of Soviet Scientists) Moscow, Izd-vo AN SSSR, 1959. 77 p. Errata slip inserted. 1,700 copies printed. 1 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2624
Topchiyev, Aleksandr Vasil'yevich, Murtuza Fatullayevich Nagiyev, and Togrul Neymat ogly Shakhtakhtinskiy
ZNACHENIYE NEFTI V PROIZVODSTVE SOVREMENNYKH SINTETICHESKIKH MATERIALOV (Importance of Petroleum in Production of Modern Synthetic Materials) Moscow, Izd-vo AN SSSR, 1959. 126 p. (Series: Akademiya nauk SSSR. Nauchno-populyarnaya seriya) Errata slip inserted. 15,000 copies printed. ed. of Publishing House: B. E. Davydov; Tech. ed.: I. A. Makogonova. 2 p.

Microfilm $1.80 Photocopy $1.80

BR-SOV/2627
Andronov, Aleksandr Aleksandrovich, Aleksandr Adol'fovich Vitt, and Semen Emmanuilovich Khaykin
TEORIYA KOLEBANIY (Theory of Vibrations) 2nd ed., rev. and enl. Moscow, Fizmatgiz, 1959. 915 p. 20,000 copies printed. 8 p; Microfilm $1.80 Photocopy $1.80

BR-SOV/2628
Kel'bert, Yakov Markovich, Mikhail Mikhaylovich Osminin, and Gavriil Vasil'yevich Senatov
NORMIROVANIYE SLESARNO-SBOROCHNYKH RABOT (Setting Up Standards for Machining and Assembling Operations) Leningrad, Sudpromigiz, 1958. 361 p. 2,600 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2630
Krivosheyev, Mark Iosifovich, Lev Semyenovich Leytes, and Vladimir Borisovich Renard
TEKHNIKA TELEVIZIONNOGO VESHCHANIYA; INFORMATSIONNYY SBORNIK (Television Broadcasting; Information Manual) Moscow, Svyaz'izdat, 1959. 162 p. (Series: Tekhnika svyazi za rubezhom) Errata slip inserted. 11,000 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2632
Akademiya nauk SSSR. Institut mashinovedeniya
TRENIYE I IZNOS V MASHINAKH; SBORNIK XII (Friction and Wear in Machines; Collection 12) Moscow, Izd-vo AN SSSR, 1958. 354 p. Errata slip inserted. 4,000 copies printed. 4 p. Microfilm $1.80 Photocopy $1.80

BR-YUG/2633
Lolic, Branimir,
VISOKOFREKVENTNO ZAGREVANJE I NJEGOVA PRIMENA U INDUSTRIJI (High-Frequency Heating and Its Application in Industry) Beograd, Novinsko-Izdayacko preduzece Tekhnicka knjiga, 1958. 248 p. (Series: Teknicke knjiga biblioteka) Number of copies printed not given. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2634
U. S. S. R. Vsesoyuznyy komitet standartov
DOPUSKI I POSADKI (Tolerances and Fits) Official edition. Moscow, 1956. 118 p. (Series: Gosudarstvennyye standarty SSSR). Errata slip inserted. 10,000 copies printed. 3 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2637
Kiselev, Boris Abramovich
STEKLOPLASTY-MATERIAL BUDUSHCHEGO (Glass Plastics-Material of the Future) Moscow, Izd-vo AN SSSR, 1959. 61 p. (Series: Akademiya nauk SSSR. Nauchno-populyarnaya seriya) 20,000 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2639
Yakovlev, Konstantin Pavlovich
STROYENIYE ATOMA I YADERNYYE PROTSESSY (Atomic Structure and Nuclear Processes) Moscow, Fizmatgiz, 1959. 140 p. (Series: Lektsionnyye demonstratsii po fizike, vyp. 9) 10,000 copies printed. 3 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2640
Privezentsev, Vladimir Alekseyevich
OBMOTOCHNYYE PROVODA S EMALEVOY I VOLOKNISTOY IZOLYATSIYEY (Enamel and Fiber Insulated Magnetic Wire) 3rd ed., rev. Moscow, Gosenergoizdat, 1959. 448 p. Errata slip inserted. 8,500 copies printed. 4 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2642
Mezhiritskiy, Leonid Mikhaylovich
PRIYEMO-SDATCHIK NEFTEBAZY (Petroleum Bulk Plant Receiving and Delivering Attendant) 2d ed., rev. and enl. Moscow, Gostoptekhizdat, 1958. 238p. 4,500 copies printed. 4 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2643
Tarasov, Vasiliy Vasil'yevich,
NOVYYE VOPROSY FIZIKI STEKLA (New Problems in the Physics of Glass) Moscow, Gosstroyizdat, 1959. 269 p. Errata slip inserted. 2,000 copies printed. 4 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2650
Shumilovskiy, Nikolay Nikolayevich, and Lel' Vladimirovich Mel'ttser
OSNOVY TEORII USTROYSTV AVTOMATICHESKOGO KONTROLYA S ISPOL'ZOVANIYEM RADIOAKTIVNYKH IZOTOPOV (Fundamentals of the Theory of Automatic Control Systems Using Radioactive Isotopes) Moscow, Izd-vo AN SSSR, 1959. 141 p. Errata slip inserted. 5,000 copies printed. 3 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2651
Shirokov, Petr Alekseyevich (Deceased), and Aleksandr Petrovich Shirokov
AFFINNAYA DIFFERENTSIAL'NAYA GEOMETRIYA (Affine Differential Geometry) Moscow, Fizmatgiz, 1959. 319 p. 6,000 copies printed. 4 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2652
Konakov, Petr Kuz'mich
TEORIYA PODOBIYA I YEYE PRIMENENIYE V TEPLOTEKHNIKE (The Theory of Similitude and Its Application in Heat Engineering) Moscow, Gosenergoizdat, 1959. 207 p. 5,500 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2653
Dunduchenko, Leonid Yemel'yanovich, Docent
TEORIYA FUNKTSIY KOMPLEKSNOGO PEREMENNOGO; KONSPEKT LEKTSIY (Theory of Functions of Complex Variables; Abstracts of Lectures) Kiyev, 1958. 71 p. 1,200 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2654
Masyukov, V. N.
ENTROPIYA I STATISTICHESKOYE OBOSNOVANIYE NOVOY FUNKTSII SOSTOYANIYA FIZICHESKIKH TEL (Entropy and Statistical Proof of a New Function of the State of Physical Bodies) Moscow, 1958. 14 p. Errata slip inserted. 2,000 copies printed. 1 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2657
Zubov, Vladimir Ivanovich
MATEMATICHESKIYE METODY ISSLEDOVANIYA SISTEM AVTOMATICHESKOGO REGULIROVANIYA (Mathematical Methods of Investigation of Automatic Control Systems) Leningrad, Sudpromgiz, 1959. 323 p. Errata slip inserted. 6,500 copies printed. 3 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2658
Artobolevskiy, Ivan Ivanovich
TEORIYA MEKHANIZMOV DLYA VOSPROIZVEDENIYA PLOSKIKH KRIVYKH (Theory of Plane Curve-tracing Mechanisms) Moscow, Izd-vo AN SSSR, 1959. 253 p. (Series: Problemy teorii mashin) 4,000 copies printed. 3 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2659
Akademiya nauk SSSR. Institut mekhaniki
INZHENERNYY SBORNIK, T. 25 (Engineering Symposium, Vol. 25) Moscow, Izd-vo AN SSSR, 1959. 218 p. Errata slip inserted. 2,200 copies printed. 3 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2660
Vsesoyuznyy matematicheskiy s"yezd. 3rd, Moscow, 1956
TRUDY. T. 4: KRATKOYE SODERZHANIYE SEKTSIONNYKH DOKLADOV. DOKLADY INOSTRANNYKH UCHENYKH (Transactions of the 3rd All-Union Mathematical Conference in Moscow. Vo. 4: Summary of Sectional Reports. Reports of Foreign Scientists) Moscow, Izd-vo AN SSSR, 1959. 247p. 2,200 copies printed. 17 p. Microfilm $2.40 Photocopy $3.30

BR-CZECH/2663
Hrusa, Karel,
DESET KAPITOL Z DIFERENCIALNIHO A INTEGRALNIHO POCTU (Ten Chapters on Differential and Integral Calculus, 3rd ed. Praha, Nakl. CAV, 1959. 170 p. (Series: Ceskoslovenska Akademie Ved. Sekce matematicko-fysikalni. Veda vsem, sv. 19) 8,250 copies printed. 2 p. Microfilm $1,80 Photocopy $1.80

BR-SOV/2664
Filonenko-Borodich, Mikhail Mitrofanovich
TEORIYA UPRUGOSTI (Theory of Elasticity) 4th ed. ,rev. and enl. Moscow, Fizmatgiz, 1959. 364p. 13,000 copies printed. 5 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2666
USSR. Ministerstvo svyazi. Tekhnicheskoye upravleniye
ELEKTRONNAYA FOTOTELEGRAFIYA; INFORMATSIONNYY SBORNIK (Electronic Facsimile Systems; Information Handbook) Moscow, Svyaz'izdat, 1958. 132 p. (Series: Tekhnika svyazi) 9,000 copies printed. 4 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2668
Verbitskaya, Tat'yana Nikolayevna
VARIKONDY (Varicaps) Moscow, Gosenergoizdat, 1958. 61 p. (Series: Massovaya radiobiblioteka, vyp. 318) 40,000 copies printed. 2 p. Microfilm $1.80 Phtotcopy $1.80

BR-SOV/2674
Rybalov, Anatoliy Grigor'yevich
LAMPY S BEGUSHCHEY I OBRATNOY VOLNOY (Traveling and Backward Wave Tubes) Moscow, Voyen. izd-vo M-va obor. SSSR, 1959. 61 p. (Series: Radiolokatsionnaya tekhnika)No. of copies printed not given. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2686
Moscow. Aviatsionnyy tekhnologicheskiy institut
VOPROSY SOPROTIVLENIYA MATERIALOV; PROCHNOST' ALYUMINIYEVYKH SPLAVOV (Problems of the Strength of Materials; Strength of Aluminum Alloys) Moscow, Oborongiz, 1959. 117 p. (Series: Its: Trudy, vyp. 37) 3,600 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2675
Moscow. Dom nauchno-tekhnicheskoy propagandy im. F. E. Dzerzhinskogo
VYCHISLITEL'NAYA TEKHNIKA I YEYE PRIMENENIYE (Computation Technique and Its Application) Moscow, Gosenergoizdat, 1959. 391 p. (Series: Obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy RSFSR) 5,000 copies printed. 4 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2685
Tsentral'nyy aero-gidrodinamicheskiy institut
VENTILYATORY I VOZDUKHOPROVODY (Ventilators and Air Ducts) Moscow, Oborongiz, 1959. 249p. (Series: Promyshlennaya aerodinamika, sbornik No. 12) No. of copies printed not given. 4 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2691
Ayzenvarg, Yefim Vladimirovich
UCHEBNIK DLYA KRANOVSHCHIK PORTAL'NOGO ELEKTRICHESKOGO KRANA (Textbook for Electric Portal Crane Operators) Moscow, Rechnoy transport, 1959. 217 p. Errata slip inserted. 5,500 copies printed. 4 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2692
Minayev, Anatoliy Nikolayevich, and Boris Il'ich Shipilin
LITEYNYYE PECHI I SUSHILA (Foundry Furnaces and Drying Chambers) Moscow, Mashgiz, 1959. 472 p. 8,000 copies printed. 7 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2696
Moscow. Eksperimental'nyy nauchno-issledovatel'skiy institut metallorezhushchikh stankov
NEKOTORYYE VOPROSY RASCHETOV MEKHANIZMOV PODACHI TYAZHELYKH METALLOREZHUSHCHIKH STANKOV NA PLAVNOST' I CHUVSTVITELNOST' PEREMESHCHENIYA (Some Problems in Designing Feed Mechanisms of Large Metal-cutting Machine Tools for Smooth and Precise Operation) Moscow, Tsentr. byuro tekhn. informatsii, 1958. 32 p. Errata slip inserted. 3,000 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2697
Bruk, Boris Il'ich
RADIOAKTIVNYYE IZOTOPY V METALLURGII I METALLOVEDENII SVARKI (Radioactive Isotopes in the Metallurgy and Metallography of Welding) Leningrad, Sudpromgiz, 1959. 231 p. 4,000 copies printed. 3 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2699
Chistyakov, Sergey Fedorovich
RASCHET DINAMICHESKIKH KHARAKTERISTIC TEPLOVYKH REGULIRUYEMYKH OB"YEKTOV (Design of Dynamic Characteristics of Controlled Thermal Systems) Moscow, Metallurgizdat, 1959. 186 p. Errata slip inserted. 3,000 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2702
Akademiya nauk SSSR. Institut avtomatiki i telemekhaniki. Seminar po pnevmogidravlicheskoy avtomatike. 1st, Moscow, 1957
SISTEMY, USTROYSTVA I ELEMENTY PNEVMO- I GIDROAVTOMATIKI; [Sbornik] (Pneumatic and Hydraulic Circuits Devices, and Elements in Automation; [Collection of Papers]) Moscow, Izd-vo AN SSSR, 1959. 233 p. Errata slip inserted. 2,700 copies printed. 5 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2704
Dudnikov, Yevgeniy Georgiyevich,
NEKOTORYYE PROBLEMY AVTOMATIZATSII (Some Problems of Automation) Moscow, Izd-vo "Znaniye," 1959. 30 p. (Series: Vsesoyuznoye obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy. Seriya IV, 1959, no. 20) 47,000 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2706
Mansurov, Aleksandr Matveyevich
SOVREMENNYYE KUZNECHNO-SHTAMPOVOCHNYYE TSEKHI (Modern Forging and Stamping Shops) Moscow, Mashgiz, 1959. 299 p. 5,000 copies printed. 3 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2708
ATOMNAYA ENERGIYA I FLOT; SBORNIK STATEY (Atomic Energy and the Navy; Collection of Articles) Moscow, Voyenizdat, 1959. 232 p. (Series: Nauchno-populyarnaya biblioteka) Number of copies printed not given. 3 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2710
Danilin, B.S.
KONSTRUIROVANIYE VAKUUMNYKH SISTEM (Design of Vacuum Systems) Moscow, Gosenergoizdat, 1959. 271 p. 9,000 copies printed. 3 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2712
Akademiya nauk SSSR.
PEREVODNAYA MASHINA P.P. TROYANSKOGO; SBORNIK MATERIALOV O PEREVODNOY MASHINE DLYA PEREVODA S ODNOGO YAZYKA NA DRUGIYE, PREDLOZHENNOY P.P. TROYANSKIM V. 1933 g. (P. P. Troyanskiy's Translation Machine; Collection of Materials on a Translation Machine for Translating One Language Into Others, Proposed by P.P. Troyanskiy in 1933) Moscow, Izd-vo AN SSSR, 1959. 52 p. 2,000 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2719
Prokof'yev, Vladimir Konstantinovich
EMISSIONNYY SPEKTRAL'NYY ANALIZ V SSSR; OBZOR (Emission Spectrum Analysis in the USSR; A Survey) Leningrad, 1958, 34 p. 6,200 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2720
SPRAVOCHNIK PO MASHINOSTROITEL'NYM MATERIALAM. TOM 1: STAL' (Handbook on Machine-building Materials. Vo. 1: Steel) Moscow, Mashgiz, 1959. 907 p. Errata slip inserted. 32,000 copies printed. 14p. Microfilm $2.40 Photocopy $3.30

BR-SOV/2726
Borodulin, Georgiy Mikhaylovich
PRIMENENIYE KISLORODA V ELEKTROMETALLURGII STALI (Utilization of Oxygen in the Electrometallurgy of Steel) Moscow, Metallurgizdat, 1959. 86 p. Errata slip inserted. 3,000 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2730
Andreyev, A. V.
ISSLEDOVANIYE I RASCHET KONVEYYERNYKH LENT I PRIVODOV (Investigation and Design of Conveyor Belts and Drives) Moscow, Ugletekhizdat, 1959. 99 p. Errata slip inserted. 1,750 copies printed. 1 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2731
Sandakova, E. V.
"NEZVYCHAYNI" NEBESNI YAVYSHCHA (Unusual Celestial Phenomena) Kyyiv, 1958. 34 p. 75,000 copies printed. 1 p. Microfilm $1.80 Photocopy $1.80

BR-POL/2732
Piasecki, Marian Brunon
FOTOGRAMETRIA (Photogrammetry) 2d ed., rev. and enl. Warszawa, Panstwowe Przedsiebiorstwo Wydawnictw Kartograficznych, 1955. 181 p. 2,140 copies printed. 4 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2733
Soveshchaniya po unifikatsii stratigraficheskikh skhem Dopaleozoya i Paleozoya Vostochnogo Kazakhstana, Alma-Ata, 1958
REZOLYUSIYA... (Resolutions of the Conference on the Unification of Stratigraphic Charts of the Pre-Paleozoic and Paleozoic of Eastern Kazakhstan) Alma-Ata, Izd-vo AN Kazakhskoy SSR, 1958. 36 p. Errata slip inserted. 6,000 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2734
Khazhakyan, L. V.
KINETIKA DIMERIZATSII ATSETILENA V TONKIKH SLOYAKH RASTVOROV KUPROKOMPLEKSOV; AVTOREFERAT DISSERTATSII, PREDSTAVLENNOY NA SOISKANIYE UCHENOY STEPENI KANDIDATA KHIMICHESKIKH NAUK (Kinetics of Acetylene Dimerization in Thin Layers of Cuprocomplex Solutions; Author's abstract of a Dissertation for the Degree of Candidate of Chemical Sciences) Yerevan, 1958. 18p. 150 copies printed. 1 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2735
Samoylov, Oleg Yakovlevich
STRUKTURA VODNYKH RASTVOROV ELEKTROLITOV I GIDRATATSIYA IONOV (Structure of Aqueous Solutions of Electrolytes and Hydration of Ions) Moscow, Izd-vo AN SSSR, 1957. 179 p. 4,500 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2736
Ivanov, V. S.
STABILIZATSIYA I VOSSTANOVLENIYE ENERGETICHESKIKH MASEL (Stabilizing and Reclaiming Power Machinery Oils) Moscow, Gosenergoizdat, 1958. 26 p. (Series: Iz opyta sovetskoy energetiki) 6,150 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2739
Akademiya nauk SSSR. Institut mashinostroyeniya
PROBLEMY PROCHNOSTI V MASHINOSTROYENII VYP. 3 (Strength Problems in Mechanical Engineering, No. 3) Moscow, Izd-vo AN SSSR, 1959. 94 p. Errata slip inserted. 3,000 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2740
Osipov, Kim Aleksandrovich
METODIKA RESHENIYA ZADACH PO REZANIYU METALLOV; PREDMET "OSNOVY UCHENIYA O REZANII METALLOV I REZHUSHCHIY INSTRUMENT" (Methods of Solving Problems in Metal Cutting; for the Course, Fundamentals of the Study of Metal Cutting and the Cutting Tools) Moscow, 1958. 75 p. Errata slip inserted. 1,000 cipies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-POL/2741
Majewski, Zdzislaw
WSTEP DO ELEKTRONIKI POLPRZEWODNIKOW (Introduction to Semiconductor Electronics) Warsaw, PWN, 1958. 158 p. Errata slip inserted. 1,000 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2742
Gotlib, Arnol'd Davidovich
DOMENNYY PROTSESS (Blast Furnace Processes) Kiyev, Gostekhizdat USSR, 1958. 509 p. 4,000 copies printed. 5 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2743
Kravtsov, Konstantin Ivanovich, and Viktor Georgiyevich Linitskiy
SKREBKOVYY PEREDVIZHNOY KONVEYYER KSP-1 (KSP-1 Mobile Scraper Conveyor) Moscow, Ugletekh-

izdat, 1959. 63 p. Errata slip inserted. 5,000 copies printed. 1 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2744
Khaykin, Semen Emmanuilovich
ELEKTROMAGNITNYYE KOLEBANIYA I VOLNY (Electromagnetic Oscillations and Waves) Moscow, Gosenergoizdat, 1959. 255 p. (Series: Massovaya radiobiblioteka, vyp. 325) 40,000 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2747
RADIOLYUBITEL'SKIYE IZMERITEL'NYYE PRIBORY (Electric Meters Designed by Radio Amateurs) Moscow, Gosenergoizdat, 1959. 102 p. (Series: Massovaya radiobiblioteka, vyp. 323) 100,000 copies printed. 3p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2748
Aranovich, B. I.
OSNOVY TELEMEKHANIKI I AVTOKONTROLYA; PIS'MENNYYE LIKTSII. Vyp. 1. PARAMETRICHESKIYE STABILIZATORY TAKA I NAPRYAZHENIYA (Fundamentals of Remote Control and Automatic Inspection; Written Lectures. No. 1. Parametric Current and Voltage Regulators) Leningrad, 1958. 37 p. 1,000 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2755
Krasovskiy, Nikolay Nikolayevich
NEKOTORYYE ZADACHI TEORII USTOYCHIVOSTI DVIZHENIYA (Some Problems in the Theory of Stability of Motion) Moscow, Fizmatgiz, 1959. 211p. 5,000 copies printed. 3 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2757
Luzin, Nikolay Nikolayevich
SOBRANIYE SOCHINENIY. T. 3: RABOTY PO RAZLICHNYM VOPROSAM MATEMATIKI (Collected Works Vol. 3: Works on Various Problems in Mathematics) Moscow, Izd-vo AN SSSR, 1959. 505 p. Errata slip inserted. 2,500 copies printed. 3 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2759
Korovkin, Pavel Petrovich
LINEYNYYE OPERATORY I TEORIYA PRIBLIZHENIY (Linear Operators and the Theory of Approximations) Moscow, Fizmatgiz, 1959. 211 p. 9,000 copies printed. 3 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2762
Golubev, Il'ya Fedorovich
VYAZKOST' GAZOV I GAZOVYKH SMESEY, SPRAVOCHNOYE RUKOVODSTVO (Viscosity of Gases and Gas Mixtures; a Manual) Moscow, Fizmatgiz, 1959. 375 p. 6,000 copies printed. 3 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2763
Freydlina, Rahil' Khatskelevna, and Shavarsh Avetisovich Karapetyan
TELOMERIZATSIYA I NOVYYE SINTETICHESKIYE MATERIALY (Telomerization and New Synthetic Materials) Moscow, Izd-vo AN SSSR, 1959. 103 p. 20,000 copies printed. 3 p.Microfilm $1.80 Photocopy $1.80

BR-SOV/2766
Fedorov, Valentin Ivanovich
AEROFOTOIZYSKANIYA AVTOMOBIL'NYKH DOROG (Aerophotographic Surveying of Highways) Moscow, Avtotransizdat, 1959. 224 p. Errata slip inserted. 1,800 copies printed. 4 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2767
Larchenko, Yefim Gerasimovich
PYATIZNACHNYYE TABLITSY DLYA RESHENIYA GEODEZICHESKIKH ZADACH NA ARIFMOMETRE (Five-Place Tables for Solving Geodetic Problems With an Arithmometer) Moscow, Geodezizdat, 1959. 49 p. Errata slip inserted. 15,000 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2768
Vsesoyuznoye soveshchaniye po geotermicheskim issledovaniyam. 1st, 1956.
PROBLEMY GEOTERMII I PRAKTICHESKOGO ISPOL'ZOVANIYA TEPLA ZEMLI; TRUDY, T. 1. (Geothermal Problems and the Practical Utilization of Terrestrial Heat; Transaction of the 1st All-Union Conference on Geothermal Investigations, Vol. 1) Moscow, Izd-vo AN SSSR, 1959. 254 p. Errata slip inserted. 1,300 copies printed. 3 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2769
Baranov, Yevgeniy Gerasimovich, Pavel Stepanovich Danchev, Konstantin Ivanovich Ivanov, Vladimir Olimpiyevich Mal'chonok, Aleksey Dmitriyevich Pashkov, and Aleksandr Nisanovich Khanukayev
ISSLEDOVANIYE PROTSESSOV BURENIYA I VZRYVANIYA S PRIMENENIYEM KINOS"YEMKI (Photographic Study of Drilling and Blasting Processes) Moscow, Ugletekhizdat, 1959. 186 p. 2,000 copies printed. 3 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2770
Malinina, Natal'ya Yevgen'yevna
MAGNITNOYE POLE ZEMLI (The Earth's Magnetic Field) Moscow, Svyaz'izdat, 1959. 39 p. (Series: Lektsii po tekhnike svyazi) 8,300 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2771
Rubinshteyn, Yevgeniya Samoilova
K PROBLEME IZMENENIYA KLIMATA; NALICHIYE I KHARAKTER IZMENENIYA KLIMATA (Climatic Changes; Existence and Nature of Climatic Changes) Leningrad, Gidrometeoizdat, 1946. 83 p. (Series: Trudy nauchno-issledovatel'skikh uchrezhdenii. Ser. 1, Meteorologiya, vyp. 22) PHOTOCOPY. Errata slip inserted. 500 copies printed. 2 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2772
Bykov, Yu.S.
TEORIYA RAZBORCHIVOSTI RECHI I POVYSHENIYE EFFEKTIVNOSTI RADIOTELEFONNOY SVYAZI (Theory of Speech Intelligibility and Increasing the Efficiency of a Radio-telephone Circuit) Moscow, Gosenergoizdat, 1959. 350 p. 3,800 copies printed. 5 p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2778
Andreyev, Sergey Yefimovich, Vyacheslav Vladimirovich Tovarov, and Valentin Aleksandrovich Perov
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